

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, December 2014

Percent

Variable	Central tendency ¹					Range ²				
	2014	2015	2016	2017	Longer run	2014	2015	2016	2017	Longer run
Change in real GDP	2.3 to 2.4	2.6 to 3.0	2.5 to 3.0	2.3 to 2.5	2.0 to 2.3	2.3 to 2.5	2.1 to 3.2	2.1 to 3.0	2.0 to 2.7	1.8 to 2.7
September projection	2.0 to 2.2	2.6 to 3.0	2.6 to 2.9	2.3 to 2.5	2.0 to 2.3	1.8 to 2.3	2.1 to 3.2	2.1 to 3.0	2.0 to 2.6	1.8 to 2.6
Unemployment rate	5.8	5.2 to 5.3	5.0 to 5.2	4.9 to 5.3	5.2 to 5.5	5.7 to 5.8	5.0 to 5.5	4.9 to 5.4	4.7 to 5.7	5.0 to 5.8
September projection	5.9 to 6.0	5.4 to 5.6	5.1 to 5.4	4.9 to 5.3	5.2 to 5.5	5.7 to 6.1	5.2 to 5.7	4.9 to 5.6	4.7 to 5.8	5.0 to 6.0
PCE inflation	1.2 to 1.3	1.0 to 1.6	1.7 to 2.0	1.8 to 2.0	2.0	1.2 to 1.6	1.0 to 2.2	1.6 to 2.1	1.8 to 2.2	2.0
September projection	1.5 to 1.7	1.6 to 1.9	1.7 to 2.0	1.9 to 2.0	2.0	1.5 to 1.8	1.5 to 2.4	1.6 to 2.1	1.7 to 2.2	2.0
Core PCE inflation ³	1.5 to 1.6	1.5 to 1.8	1.7 to 2.0	1.8 to 2.0		1.5 to 1.6	1.5 to 2.2	1.6 to 2.1	1.8 to 2.2	
September projection	1.5 to 1.6	1.6 to 1.9	1.8 to 2.0	1.9 to 2.0		1.5 to 1.8	1.6 to 2.4	1.7 to 2.2	1.8 to 2.2	

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The September projections were made in conjunction with the meeting of the Federal Open Market Committee on September 16–17, 2014.

1. The central tendency excludes the three highest and three lowest projections for each variable in each year.
2. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.
3. Longer-run projections for core PCE inflation are not collected.

Table 1.A. Economic projections for the first half of 2014*
(in percent)

Central tendencies and ranges		
	Central tendency	Range
Change in real GDP	1.2	1.2
September projection	1.2 to 1.3	1.1 to 1.3
PCE inflation	1.9	1.9
September projection	1.8	1.6 to 1.8
Core PCE inflation	1.6	1.6
September projection	1.6	1.6

Participants' projections			
Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	1.2	1.9	1.6
2	1.2	1.9	1.6
3	1.2	1.9	1.6
4	1.2	1.9	1.6
5	1.2	1.9	1.6
6	1.2	1.9	1.6
7	1.2	1.9	1.6
8	1.2	1.9	1.6
9	1.2	1.9	1.6
10	1.2	1.9	1.6
11	1.2	1.9	1.6
12	1.2	1.9	1.6
13	1.2	1.9	1.6
14	1.2	1.9	1.6
15	1.2	1.9	1.6
16	1.2	1.9	1.6
17	1.2	1.9	1.6

* Growth and inflation are reported at annualized rates.

Table 1.B. Economic projections for the second half of 2014*
(in percent)

Central tendencies and ranges		
	Central tendency	Range
Change in real GDP	3.4 to 3.6	3.4 to 3.8
September projection	2.8 to 3.2	2.3 to 3.3
PCE inflation	0.5 to 0.7	0.5 to 1.3
September projection	1.2 to 1.6	1.2 to 2.0
Core PCE inflation	1.4 to 1.6	1.4 to 1.6
September projection	1.4 to 1.6	1.4 to 2.0

Participants' projections			
Projection	Change in real GDP	PCE inflation	Core PCE inflation
1	3.4	0.9	1.6
2	3.4	0.7	1.6
3	3.6	0.5	1.6
4	3.4	0.5	1.6
5	3.6	0.7	1.4
6	3.4	0.5	1.6
7	3.6	0.7	1.6
8	3.4	0.5	1.4
9	3.6	0.5	1.4
10	3.6	0.5	1.6
11	3.6	0.5	1.6
12	3.6	0.5	1.6
13	3.6	0.5	1.4
14	3.8	1.3	1.6
15	3.6	0.7	1.6
16	3.4	0.9	1.6
17	3.4	0.5	1.6

* Projections for the second half of 2014 implied by participants' December projections for the first half of 2014 and for 2014 as a whole. Growth and inflation are reported at annualized rates.

**Table 2. December economic projections, 2014–17 and over the longer run
(in percent)**

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2014	2.3	5.8	1.4	1.6	0.13
2	2014	2.3	5.8	1.3	1.6	0.13
3	2014	2.4	5.7	1.2	1.6	0.13
4	2014	2.3	5.8	1.2	1.6	0.13
5	2014	2.4	5.8	1.3	1.5	0.13
6	2014	2.3	5.8	1.2	1.6	0.13
7	2014	2.4	5.8	1.3	1.6	0.13
8	2014	2.3	5.8	1.2	1.5	0.13
9	2014	2.4	5.8	1.2	1.5	0.13
10	2014	2.4	5.7	1.2	1.6	0.13
11	2014	2.4	5.8	1.2	1.6	0.13
12	2014	2.4	5.8	1.2	1.6	0.13
13	2014	2.4	5.8	1.2	1.5	0.13
14	2014	2.5	5.7	1.6	1.6	0.13
15	2014	2.4	5.8	1.3	1.6	0.13
16	2014	2.3	5.8	1.4	1.6	0.13
17	2014	2.3	5.8	1.2	1.6	0.13
1	2015	3.0	5.5	1.8	2.0	1.63
2	2015	2.7	5.2	1.1	1.5	0.88
3	2015	2.5	5.2	1.0	1.5	1.13
4	2015	3.2	5.3	1.2	1.7	0.88
5	2015	2.7	5.3	1.0	1.6	1.13
6	2015	2.7	5.3	1.2	1.6	0.88
7	2015	3.0	5.3	1.6	1.7	1.88
8	2015	3.0	5.4	1.2	1.5	0.13
9	2015	3.0	5.3	1.3	1.5	1.13
10	2015	2.9	5.2	1.8	1.8	0.13
11	2015	2.5	5.3	1.0	1.5	0.88
12	2015	2.8	5.3	1.2	1.5	0.63
13	2015	2.6	5.3	1.0	1.5	0.63
14	2015	3.0	5.3	1.6	1.8	1.88
15	2015	2.8	5.0	1.5	2.0	1.88
16	2015	3.2	5.2	2.2	2.2	1.88
17	2015	2.1	5.4	1.2	1.7	1.63

Table 2. (continued)

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	2016	3.0	5.3	2.1	2.1	3.63
2	2016	2.3	5.0	1.8	1.8	2.13
3	2016	2.7	5.0	1.7	1.6	2.63
4	2016	2.9	5.2	1.9	1.8	2.88
5	2016	2.4	5.2	1.8	1.8	2.50
6	2016	2.9	5.0	1.8	1.8	2.13
7	2016	3.0	5.4	2.0	2.0	3.38
8	2016	3.0	5.1	1.6	1.6	1.13
9	2016	3.0	5.1	1.7	1.7	2.38
10	2016	2.7	4.9	2.0	2.0	0.38
11	2016	2.6	5.1	1.7	1.8	1.88
12	2016	2.6	5.1	1.7	1.7	2.13
13	2016	2.7	5.0	1.7	1.7	1.88
14	2016	2.6	5.3	2.0	2.0	3.13
15	2016	2.5	5.0	2.0	2.1	4.00
16	2016	2.5	5.2	2.0	2.0	3.88
17	2016	2.1	5.1	1.8	1.9	3.13
1	2017	2.3	5.3	2.2	2.2	4.25
2	2017	2.0	5.0	2.0	2.0	3.38
3	2017	2.2	4.9	1.8	1.8	3.63
4	2017	2.5	5.2	2.0	2.0	3.88
5	2017	2.3	5.2	2.0	2.0	4.00
6	2017	2.3	4.8	1.9	1.9	3.13
7	2017	2.5	5.5	2.0	2.0	3.75
8	2017	2.5	4.9	1.8	1.8	2.63
9	2017	2.7	4.9	1.8	1.8	3.63
10	2017	2.5	4.7	2.0	2.0	2.00
11	2017	2.4	5.0	1.9	1.9	2.88
12	2017	2.3	5.0	1.8	1.8	3.38
13	2017	2.3	4.9	1.8	1.8	3.13
14	2017	2.5	5.3	2.0	2.0	3.75
15	2017	2.3	5.0	2.1	2.1	4.25
16	2017	2.3	5.7	2.0	2.0	4.13
17	2017	2.0	5.0	2.0	2.0	3.75

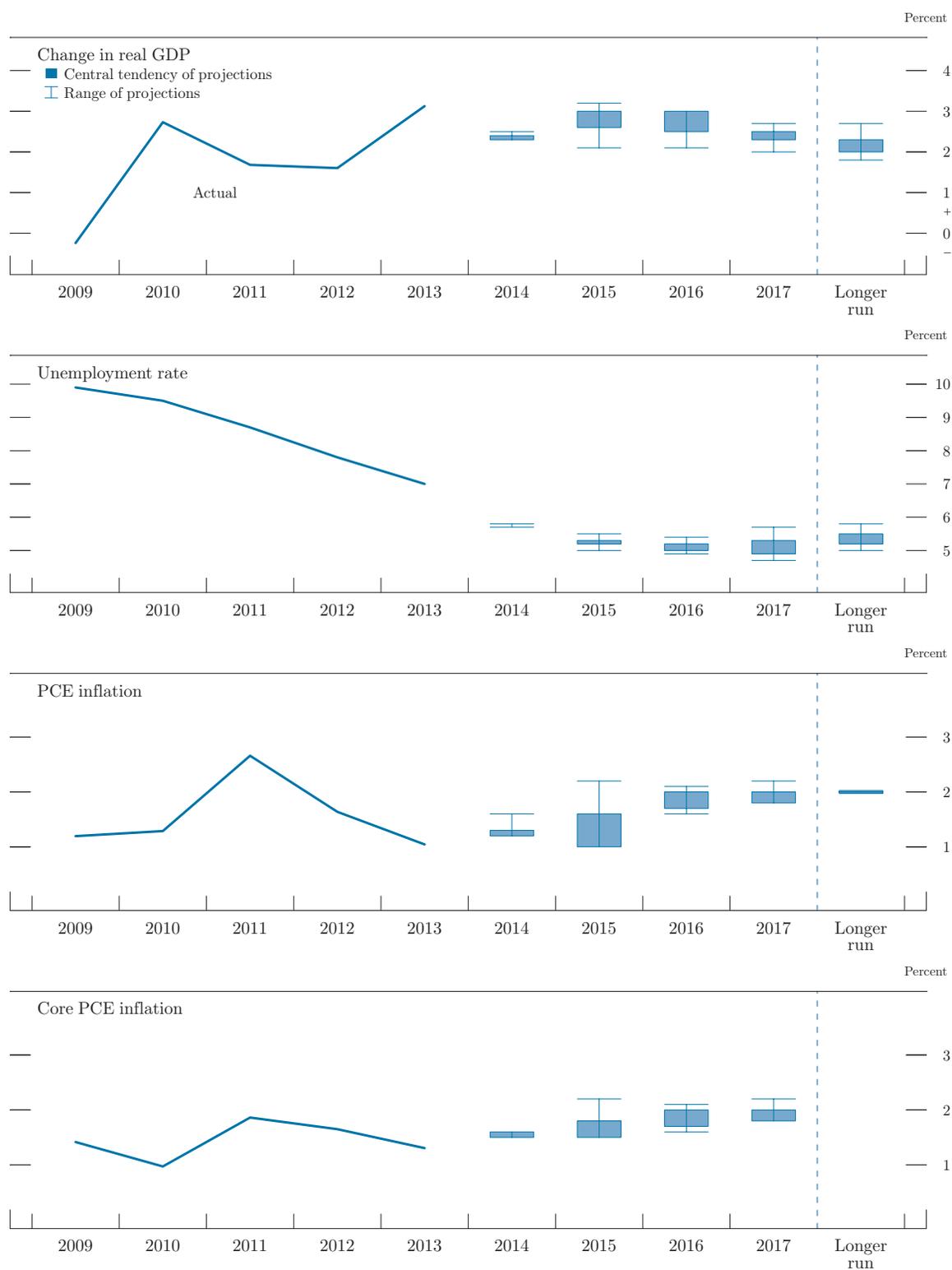
Table 2. (continued)

Projection	Year	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation	Federal funds rate
1	LR	2.3	5.5	2.0		4.25
2	LR	2.0	5.0	2.0		3.50
3	LR	2.0	5.2	2.0		3.75
4	LR	2.3	5.2	2.0		4.00
5	LR	2.1	5.2	2.0		4.00
6	LR	2.0	5.0	2.0		3.50
7	LR	2.5	5.5	2.0		3.75
8	LR	2.3	5.2	2.0		3.75
9	LR	2.7	5.2	2.0		4.00
10	LR	2.0	5.0	2.0		3.25
11	LR	2.2	5.2	2.0		3.75
12	LR	2.0	5.2	2.0		3.50
13	LR	2.0	5.2	2.0		3.75
14	LR	2.4	5.3	2.0		3.75
15	LR	2.3	5.2	2.0		3.75
16	LR	2.3	5.8	2.0		4.25
17	LR	1.8	5.5	2.0		3.75

Table 2 Appendix. Timing (quarter) of liftoff and economic conditions in quarter of liftoff

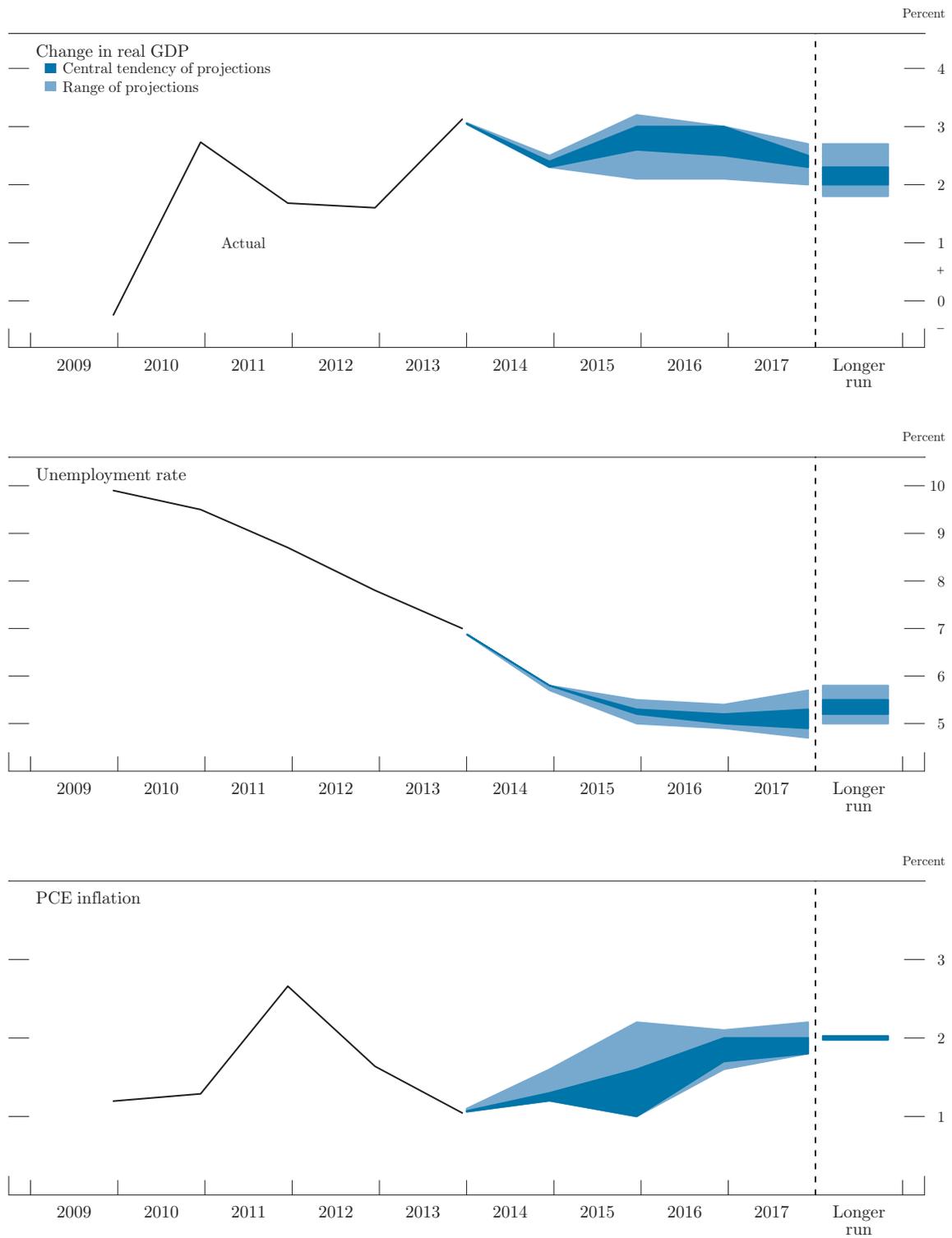
Projection	Year of first increase	Quarter of first increase	Change in real GDP	Unemployment rate	PCE inflation	Core PCE inflation
1	2015	2	3.1	5.6	1.3	1.6
2	2015	2	3.2	5.5	0.6	1.5
3	2015	2	3.0	5.4	0.5	1.5
4	2015	3	3.0	5.4	0.7	1.6
5	2015	2	3.1	5.5	0.6	1.5
6	2015	2	3.0	5.3	0.6	1.6
7	2015	1	3.6	5.7	1.0	1.6
8	2016	1	3.0	5.3	1.6	1.6
9	2015	1	3.7	5.6	0.7	1.5
10	2016	4	2.7	4.9	2.0	2.0
11	2015	2	3.0	5.4	0.5	1.5
12	2015	3	2.9	5.3	1.2	1.5
13	2015	3	2.5	5.4	0.6	1.5
14	2015	1	3.7	5.6	1.0	1.7
15	2015	1	3.6	5.5	0.9	1.7
16	2015	1	3.6	5.6	1.6	1.8
17	2015	2	2.8	5.7	0.6	1.7

Figure 1.A. Central tendencies and ranges of economic projections, 2014–17 and over the longer run



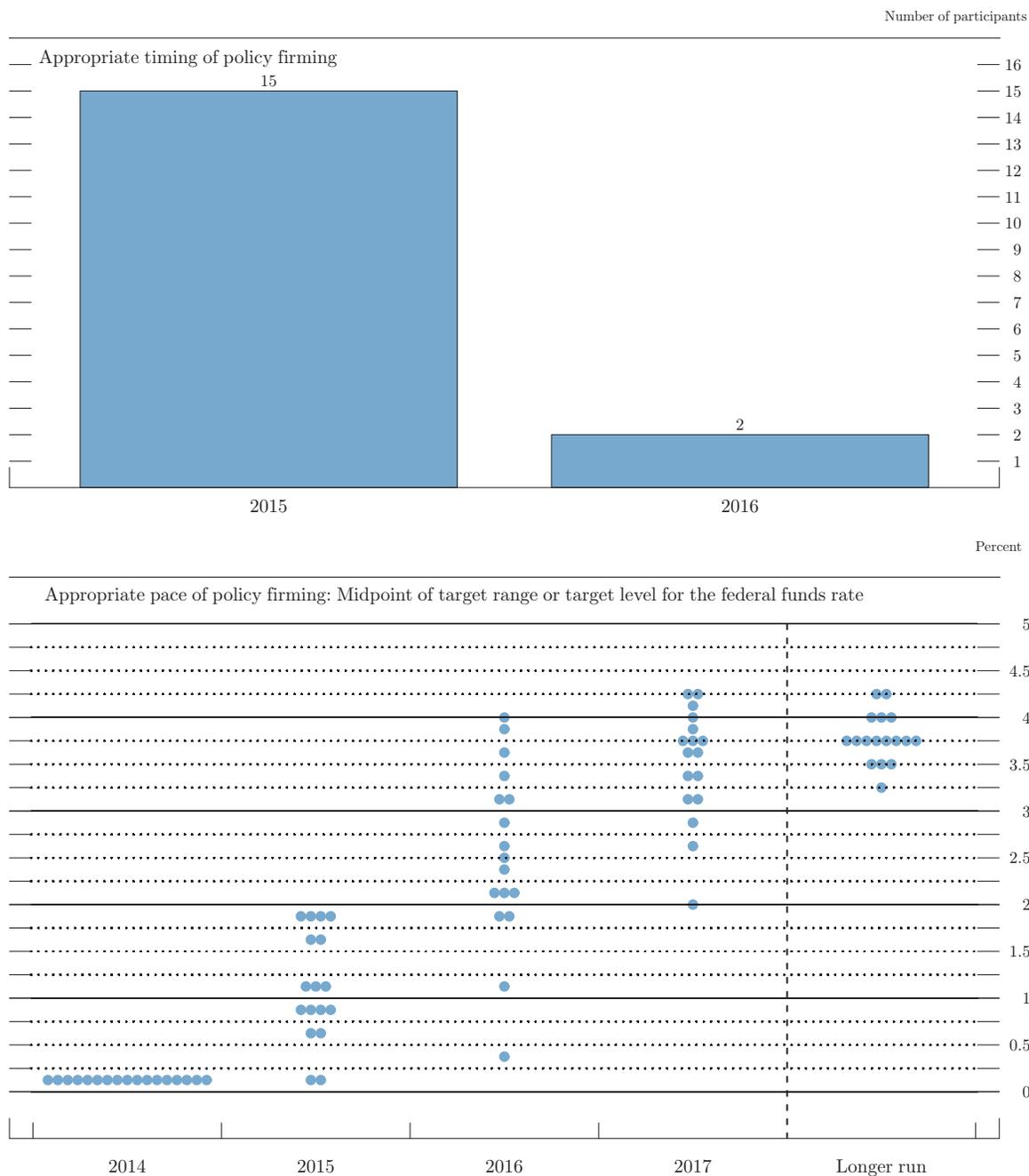
NOTE: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 1.B. Central tendencies and ranges of economic projections, 2014–17 and over the longer run



NOTE: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

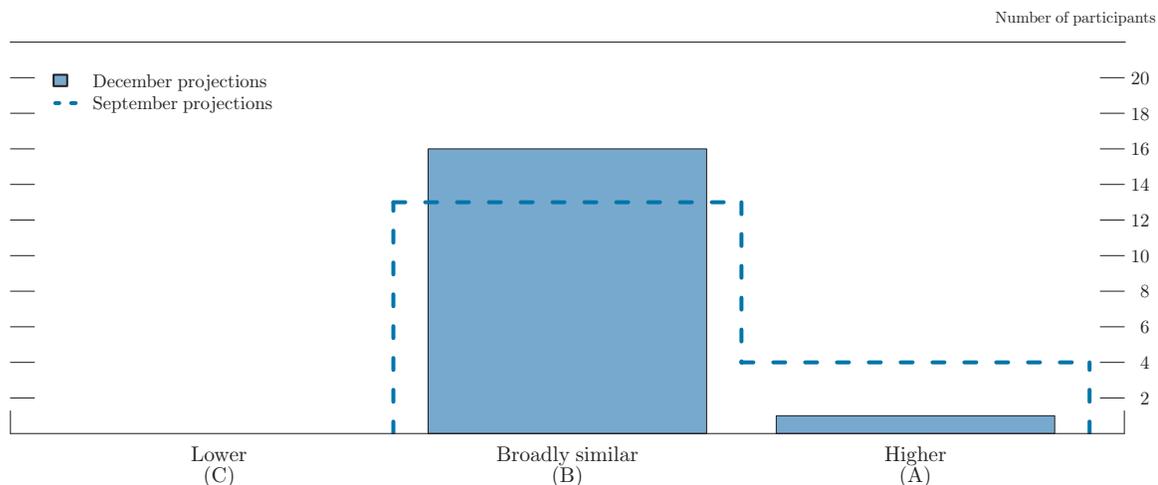
Figure 2. Overview of FOMC participants' assessments of appropriate monetary policy



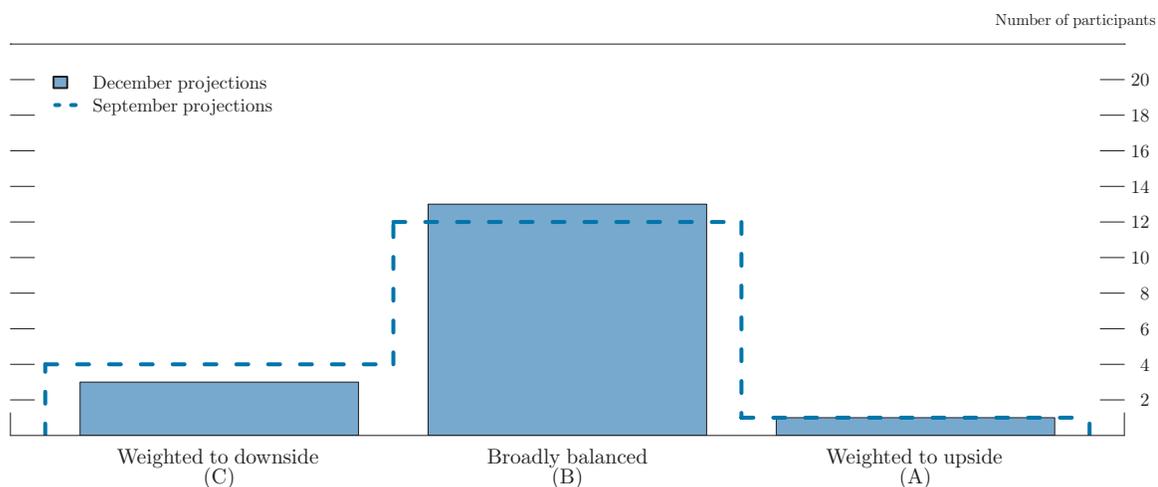
NOTE: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to 1/4 percent will occur in the specified calendar year. In September 2014, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2014, 2015, and 2016 were, respectively, 1, 14, and 2. In the lower panel, each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run.

Figure 4.A. Uncertainty and risks – GDP growth

2(a): Please indicate your judgment of the uncertainty attached to your projections relative to levels of uncertainty over the past 20 years.



2(b): Please indicate your judgment of the risk weighting around your projections.

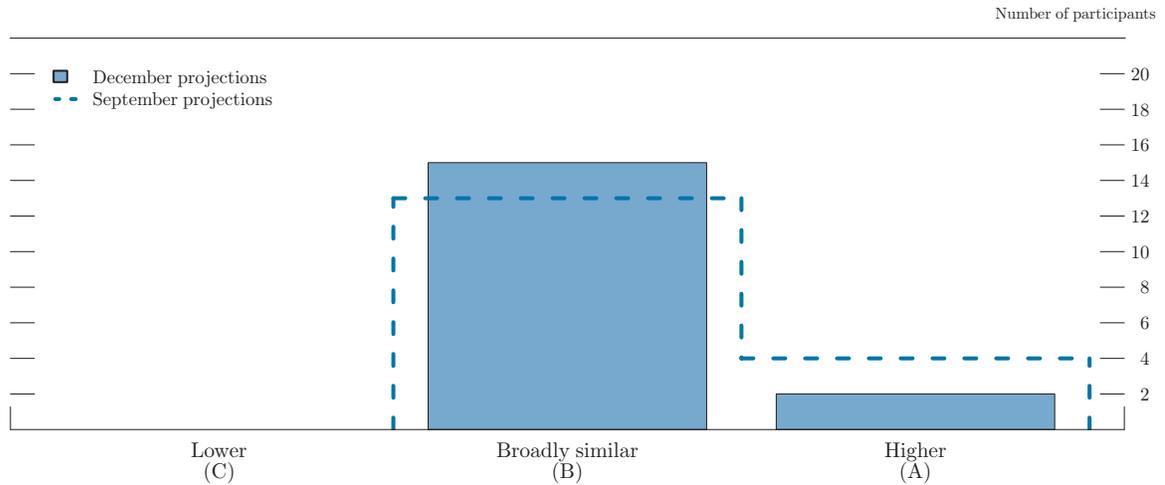


Individual responses

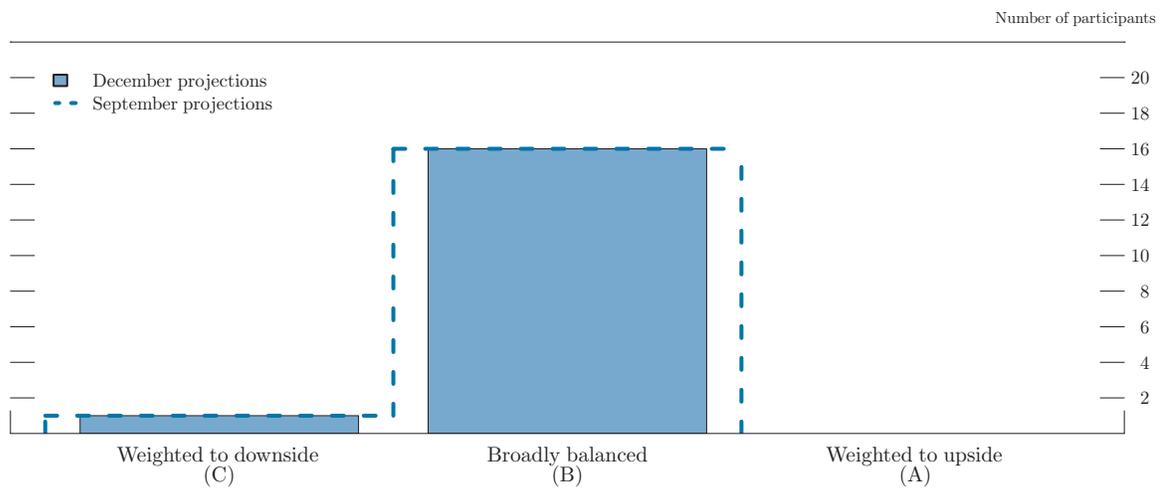
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2(b)	B	B	B	B	B	C	B	B	B	B	B	C	C	B	B	B	A

Figure 4.B. Uncertainty and risks – Unemployment rate

2(a): Please indicate your judgment of the uncertainty attached to your projections relative to levels of uncertainty over the past 20 years.



2(b): Please indicate your judgment of the risk weighting around your projections.

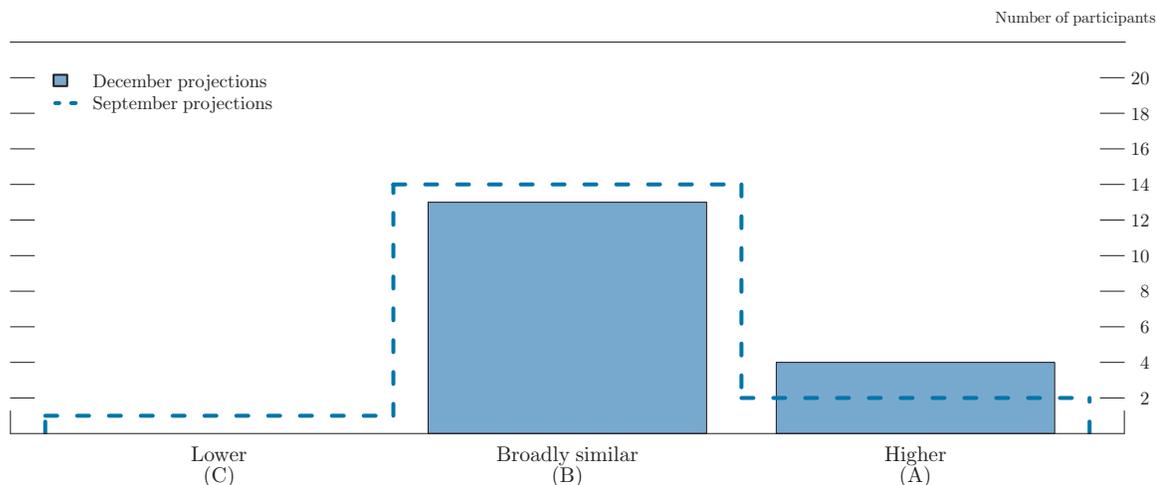


Individual responses

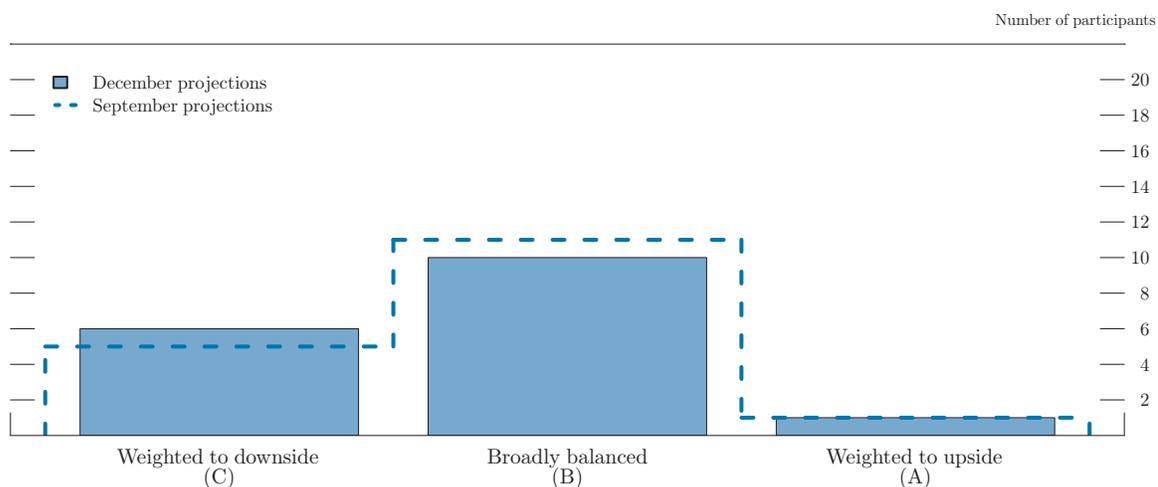
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	A	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B
2(b)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C

Figure 4.C. Uncertainty and risks – PCE inflation

2(a): Please indicate your judgment of the uncertainty attached to your projections relative to levels of uncertainty over the past 20 years.



2(b): Please indicate your judgment of the risk weighting around your projections.

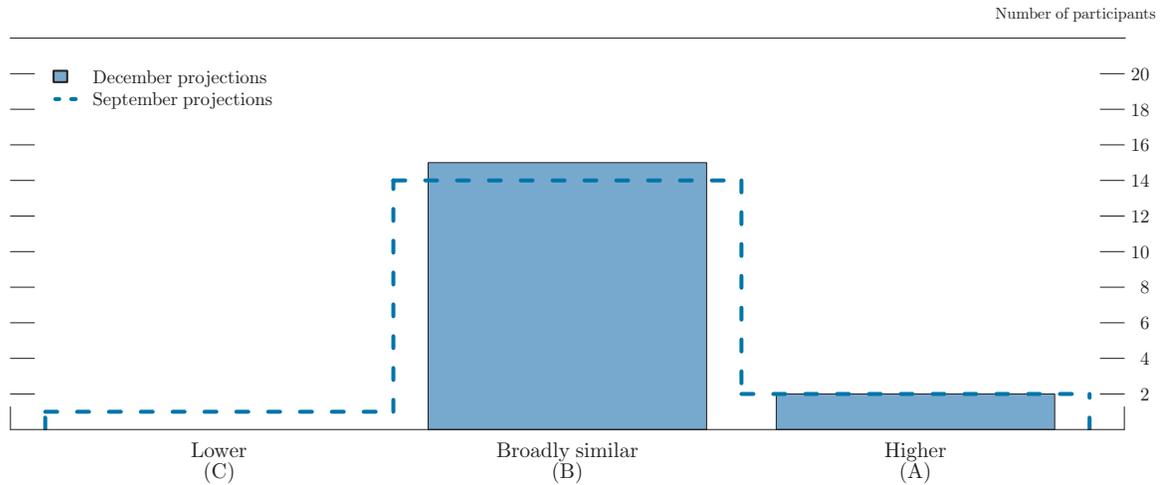


Individual responses

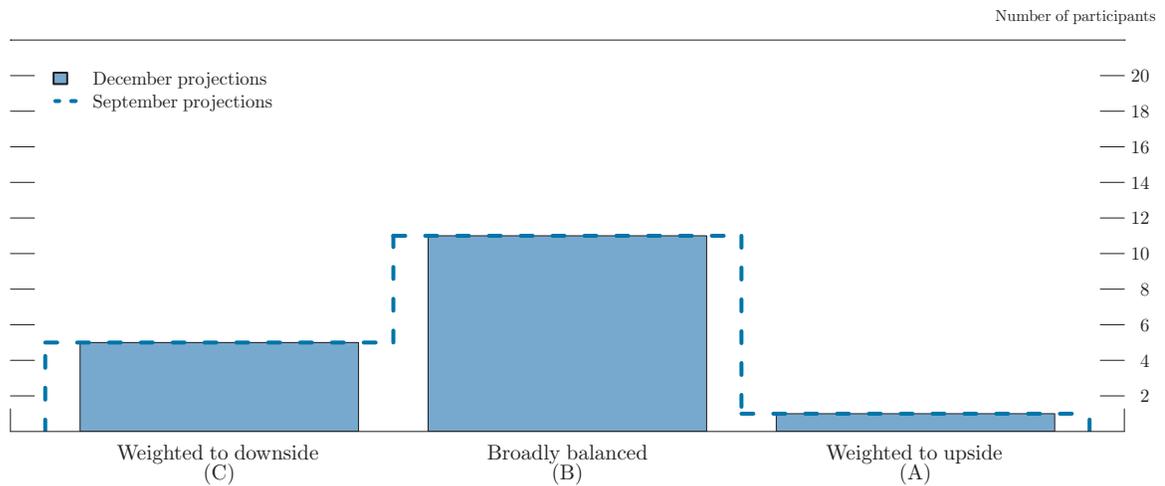
Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	A	B	B	B	B	B	B	B	B	A	A	B	B	A	B	B	B
2(b)	C	B	B	B	B	C	B	C	B	C	C	B	C	A	B	B	B

Figure 4.D. Uncertainty and risks – Core PCE inflation

2(a): Please indicate your judgment of the uncertainty attached to your projections relative to levels of uncertainty over the past 20 years.



2(b): Please indicate your judgment of the risk weighting around your projections.



Individual responses

Respondent	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2(a)	B	B	B	B	B	B	B	B	B	A	B	B	B	A	B	B	B
2(b)	B	B	B	B	B	C	B	C	B	C	C	B	C	A	B	B	B

Longer-run Projections

1(c). If you anticipate that the convergence process will take **SHORTER OR LONGER** than about five or six years, please indicate below your best estimate of the duration of the convergence process. You may also include below any other explanatory comments that you think would be helpful.

Respondent 1: I anticipate that convergence will take less than 5 years. Specifically, my forecast calls for inflation to rise to close to 2 percent in 2015. I expect the unemployment gap to be nearly closed in 2015. By 2017 I expect real GDP growth to slow to its longer-run rate.

Respondent 2: We continue to assume that the economy's potential growth rate is within a range around 2% and maintain a point estimate of 2%. Based on further analysis since September (including our projection of the intersection of the Beveridge curve and job creation curve in "steady state," as well as the behavior of wage growth as unemployment has fallen below 6%), even though we are maintaining that a reasonable range for the longer-run unemployment rate is 4 1/2% to 6%, we have lowered our point estimate from 5 1/4% to 5%. We expect the unemployment rate to reach its longer-run level and the output gap to be small in 2016Q4, but some of our recent scenario analysis of labor flows as well as our analysis of recent long expansions suggests that there is a significant probability that the unemployment rate could fall to below 5% by that time.

We assume that long-term inflation expectations will continue to be anchored at levels consistent with the FOMC longer-run objective (2% for the PCE deflator and around 2.5% for the CPI, based on the longer-term average of the difference between CPI and PCE inflation). Under these conditions and with the output gap anticipated to shrink over the coming years, we expect inflation as measured by the PCE deflator to be about 2% in 2017 and thereafter.

As indicated in our projections, we anticipate that under appropriate monetary policy and no further shocks, the convergence process should be largely completed by late 2016 or early 2017.

Respondent 3: N/A

Respondent 4: No comment.

Respondent 5: N/A

Respondent 6: N/A

Respondent 7: At this point, convergence is likely in two to three years.

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: It will be shorter under appropriate monetary policy, in part because the FOMC will take appropriate steps to help return the underlying rate of inflation to 2%. My assessment of appropriate monetary policy puts no weight on interest rate smoothing.

Respondent 11: N/A

Respondent 12: N/A

Respondent 13: Convergence to the longer-run level of the unemployment rate is expected to occur by the end of 2015. Inflation is projected to reach the 2 percent objective in 2019.

Respondent 14: The convergence process may be somewhat shorter than 5-6 years

Respondent 15: I expect the unemployment rate to reach its longer-run sustainable level during the first half of 2015, and then to fall past that level. What happens then depends very much on how we conduct and communicate monetary policy. Smooth convergence to the natural rate from below will require deft maneuvering and a good deal of luck, and is unlikely to be achieved until 2018. I expect core inflation to be close to 2 percent in 2015, overshoot somewhat in 2016, and not converge back to target until 2019.

Respondent 16: I anticipate a shorter than 5 or 6 year convergence process for real GDP growth, PCE inflation, and unemployment. Real GDP will converge to its long-run value in 2017, while PCE inflation will converge to its long-run value in 2016. As part of its convergence process, I anticipate that inflation will slightly exceed 2% in 2015. Meanwhile, I foresee the convergence of the unemployment rate to take roughly 4 years. Given my long-run projection of 5.8%, the unemployment will be less than its long-run value in 2015 and 2016 before moving upward in 2017 and then reaching its long-run value in 2018.

Respondent 17: N/A

Uncertainty and Risks

2(a). (Optional) If you have any explanatory comments regarding your judgment of the uncertainty attached to your projections relative to levels of uncertainty over the past 20 years, you may enter them below.

Respondent 1: The outlook for PCE inflation is subject to greater uncertainty relative to historical averages due in part to recent shifts in energy prices and foreign exchange rates.

Respondent 2: Quantitative judgment based on the width of the probability intervals from the FRBNY forecast distribution for real GDP growth and core PCE inflation relative to the forecast errors over the last 20 years. The width of these intervals have not changed much on net since the September SEP: the intervals would have been wider at the time of the October FOMC, but developments since then have pointed to a narrowing that offsets the earlier widening. Although still wide, the forecast intervals for core PCE inflation appear broadly consistent with the SEP standard, taking rough account for the differences between forecast errors for overall consumer inflation and core PCE inflation. The probability intervals for the real activity forecasts are still relatively wide in part because of the still-extraordinary economic and financial environment, including the policy rate remaining constrained by its effective lower bound.

Respondent 3: N/A

Respondent 4: No comments.

Respondent 5: Uncertainty about my projection for economic activity is similar to its average level over the past 20 years, which, of course, is a period that was characterized by considerable turmoil. Inflation remains anchored by quite stable longer-run inflation expectations at the FOMC's stated goal of 2 percent. Inflation expectations have now been well anchored for about 20 years, so I see the magnitude of the uncertainty around the inflation outlook as consistent with that over the past 20 years.

Respondent 6: N/A

Respondent 7: N/A

Respondent 8: N/A

Respondent 9: N/A

Respondent 10: N/A

Respondent 11: N/A

Respondent 12: N/A

Respondent 13: N/A

Respondent 14: It remains the case that the extraordinary monetary policy in place and uncertainties surrounding the future path of policy, including the timing of the exit from accommodative policy, contribute to uncertainty around my inflation forecast.

Respondent 15: N/A

Respondent 16: N/A

Respondent 17: N/A

Uncertainty and Risks (continued)

2(b). (Optional) If you have any explanatory comments regarding your judgment of the risk weighting around your projections, you may enter them below.

Respondent 1: The risks to the outlook for PCE inflation are tilted toward the downside as a result of the recent shifts in energy prices and foreign exchange rates.

Respondent 2: Quantitative judgment based on the difference between the central projection and the expected value from the FRBNY forecast distribution. At the time of the October FOMC, we would have assessed that the risks to growth and inflation were skewed modestly to the downside; developments since then have indicated some reduction in those downside risks. Under our appropriate policy stance, the risks to the inflation outlook thus are roughly balanced, as has been the case in recent SEPs. As has been the case in the past few SEPs, the risks to the real activity outlook also are roughly balanced over medium-term horizons, as indicated in the summary of our judgment; however, at the longer horizons, the risks are still modestly skewed to the downside. The broad balance over the medium term reflects two opposing forces. One is the possibility that the sluggish growth through much of this expansion has come from more persistent structural factors rather than from various headwinds that are expected to abate in our central forecast. The other is the possibility that the economy has greater underlying strength than anticipated in our projection. Beyond those forces, other risks include the impacts of the oil price decline and dollar appreciation on U.S. activity and inflation; the low inflation data and continued weakness in many parts of the world, which could leave the U.S. and world economies more susceptible to negative shocks; and the constraints that monetary policy faces under the effective lower bound in a number of major economies.

Respondent 3: N/A

Respondent 4: No comments.

Respondent 5: Risks to economic activity appear balanced. Recent data continue to point to steady improvements in economic conditions going forward. Most of the remaining headwinds continue to abate. Indeed, with diminishing headwinds, upside scenarios involving a virtuous cycle of economic activity become more plausible.

The zero lower bound does somewhat constrain our ability to respond to adverse shocks. However, this constraint no longer appears quantitatively important, especially in light of the apparent effectiveness of forward guidance and LSAPs. Moreover, normalization of monetary policy means that the zero lower bound will be less relevant over the forecast horizon.

Inflation risks are also balanced.

Respondent 6: Although I see the distribution of shocks to aggregate demand as reasonably balanced, I still view the balance of risks to GDP growth as somewhat weighted to the downside due to the constraints that limit the ability of monetary policy to offset negative shocks to demand at the zero lower bound. I see the risks to unemployment as balanced, with the risk of higher unemployment due to the constraints imposed by the zero lower bound offset by the risk that productivity may continue to grow more slowly than anticipated, as it has done over the past few years. For some time now both wage and price inflation has been running below the level I had anticipated, and reductions in energy prices and increases in the dollar are likely to put further downward pressure on consumer prices in coming months. In addition, market-based measures of expected inflation have continued to decline. While I view these developments as largely transitory, they do suggest that low inflation

could prove to be more persistent than I expect, creating risks to inflation I consider to be weighted to the downside.

Respondent 7: The risks to my projections are broadly balanced. The U.S. economy is picking up momentum and lower oil prices will be a net positive to spending, so growth and employment may rise more strongly than I am projecting. Weakness abroad is a downside risk to my forecast. Further weakening in the economies of key trading partners may have a larger effect on U.S. export growth than I am forecasting.

Inflation risks are balanced. So far, the moves in inflation expectations have been minor. However, if a larger, more broad-based downward drift in inflation expectations were to materialize, it would be a downward risk to my inflation projection. On the other hand, the uncertainties surrounding the withdrawal of monetary policy accommodation have the potential to create upside risks to inflation over the medium run.

Respondent 8: We think the risks to the growth and unemployment forecasts are roughly in balance. On the downside, the international outlook could easily deteriorate more and restrictive credit conditions could place greater than expected constraints on the recovery in residential investment. On the up side, improved household sector fundamentals (notably, gains in wealth and the better job market) and business sentiment suggest that we could see more pronounced “virtuous cycle” dynamic.

The factors that could place greater downward pressure on our inflation forecast continue to outnumber those that might push it up more than expected. First, international developments could put greater downward pressure on import prices than we expect. Moreover, our forecast of inflation picking up to just under 2 percent by the end of the projection period depends heavily on an upward pull from inflation expectations supported by the FOMC’s credible commitment to a symmetric 2 percent inflation target. For some time we have noted the risk that this upward force may not be as strong as we have assumed, a risk highlighted by the downward drift in inflation compensation as measured by TIPS breakevens and inflation swaps. Finally, it is possible that the natural rate of unemployment is lower than we’ve assumed, implying an extra margin of resource slack.

Respondent 9: N/A

Respondent 10: It is hard for the FOMC to respond effectively to low inflation outcomes, which means that they are more likely to occur.

Respondent 11: N/A

Respondent 12: N/A

Respondent 13: N/A

Respondent 14: I view the risks to inflation as weighted to the upside over the medium and longer run. Longer-term inflation risks reflect uncertainty about the timing and efficacy of the Fed’s withdrawal of accommodation. The risks to output growth and unemployment are balanced.

Respondent 15: N/A

Respondent 16: N/A

Respondent 17: Recent developments have led me to see a greater possibility of a sustained increase in real growth to rates above the 2 to 2 1/4 percent range that I am forecasting.

Key Factors Informing Your Judgments regarding the Appropriate Path of the Federal Funds Rate

3(c). Please describe the key factors informing your judgments regarding the appropriate path of the federal funds rate. If, in your projections for any year in the projection period, the unemployment rate for that year is close to or below your projection for its longer-run normal level and inflation for that year is close to or above 2 percent, and your assessment of the appropriate level of the federal funds rate for that year is still significantly below your assessment of its longer-run normal value, please describe the factor or factors that you anticipate will make the lower-than-normal funds rate appropriate. If you have reduced your estimate of the longer-run normal value of the federal funds rate since the previous SEP, please indicate the factor or factors accounting for the change. You may include any other comments on appropriate monetary policy here as well.

Respondent 1: My judgment regarding the appropriate path of the federal funds rate is predicated on promoting sustainable long-run economic growth and price stability. My forecast calls for inflation close to 2 percent and the unemployment rate near its longer-run level by the end of 2015. At that time, my assessment of the appropriate level of the funds rate lies below my view of its longer-run level. Given the current stance of policy and my economic outlook, the funds rate will need to be increased in a gradual manner, which will result in its reaching its longer-run level after the economy has reached full employment.

Respondent 2: The crucial factors behind our assessment of the appropriate path for monetary policy and the FFR are the current state of the economy, our central economic outlook, and our balance of risks around the central outlook. As such, we believe it is important to communicate clearly to the public that these factors will dictate the path of the policy stance. The changes along these dimensions were sufficient to lead to a small change in our assessment of the appropriate path for the FFR.

Based on our modal outlook and assuming that long-term inflation expectations remain anchored, we still anticipate that the target range for the FFR will remain at its current level until June 2015. The pace of renormalization of the target FFR following the period of near zero policy rates will then depend upon our assessment of economic conditions and the outlook, longer-term inflation expectations, and the response of overall financial conditions to policy tightening. Our current assessment of these factors is that the target FFR range at the end of 2016 will be around 2 - 2 1/4%, slightly lower than our projection in the September SEP, as recent inflation developments and the inflation outlook suggest a slightly slower pace of normalization. Based on this assessment, we also anticipate that the pace of normalization could be slower than the pace of the 2004-06 policy tightening as a means to provide insurance against the various restraining forces still faced by the U.S. economy (including those stemming from global economic and financial developments), which in turn will help ensure the achievement of the FOMC's objectives over the longer run. We thus continue to anticipate that it will be appropriate to maintain the FFR below our estimate of its longer-run level through 2016, but we expect the top of the target range at the end of 2017 to be equal to our estimate of the longer-run FFR.

Another factor informing our assessment of the appropriate path for the target FFR is our estimate of the equilibrium real short-term interest rate. We assume that in normal times this rate is in the

range of 1% - 3%; adding the objective for inflation (2%) then gives our estimated range for nominal equilibrium rate as 3.0 - 5.0%. We continue to assess that the equilibrium rate is more likely to be in the lower half of that range because of the behavior of nominal and real Treasury yields and productivity growth since the end of the recession; therefore, we have maintained our point estimate of 3 1/2%, as seen in the response to question 3(a).

We would also note that we assume that reinvestment continues until economic and financial conditions indicate that the exit from the zero lower bound appears to be sustainable and the risks of a reversion are deemed to be negligible. Based on our modal outlook, we expect those conditions to occur around the time at which the top of the FFR range reaches 1.00%, which would be near the end of 2015.

Although we do not expect to need to deploy additional tools to provide accommodation in our modal outlook, we believe it is still important for the FOMC to be prepared to employ all of its tools to offset any downside risks to the outlook that may be realized. In particular, we believe that the balance sheet remains a significant part of the overall stance of policy. Even though the bar should be set rather high to promote an active role for balance sheet policy as normalization proceeds, its ability to affect term premia and financial conditions to support achieving the FOMC objectives should not be overlooked or dismissed a priori.

Respondent 3: In my view, it will be appropriate to raise rates as early as the June meeting. I see the likelihood of liftoff in March 2015 as smaller than the likelihood of a deferral of the first increase to September 2015 or beyond. After liftoff in June, my view is that a modestly faster rate of increases will be consistent with the Baseline outcomes for GDP, unemployment and inflation, and with the Committee's likely behavior given those outcomes. I therefore project that the Committee will move somewhat faster in raising rates, with four 25 bp increases in 2015, 6 in 2016 and 4 in 2017 to bring rates near their long run equilibrium level. My estimate of the unemployment rate at year ends 2016 and 2017 is slightly below my estimate of the natural rate. There is an enormous amount of uncertainty around a point forecast of unemployment that far into the future, and around the natural rate as well.

Respondent 4: My outlook has liftoff for the federal funds rate in September 2015 (to a range of 25-50 basis points) and 25 basis point increases at each subsequent meeting before reaching a range consistent with its appropriate long-run value in mid-2017.

I do not expect the funds rate to be at its normal long-run value in 2016, despite a convergence of the unemployment rate to its long run rate. I expect that residual slack in the labor market will still be evident in other measures of labor utilization, and in the wage and price data.

Respondent 5: Output and unemployment gaps continue to decline. I expect these gaps to close by early 2016. In addition, my outlook for inflation through the end of 2016 is below our 2 percent objective. This situation continues to call for very accommodative monetary policy. Appropriate policy in this case is to delay liftoff from the zero lower bound until the middle of 2015. My judgment on appropriate policy is generally informed by looking at simple rules that adjust for the zero lower bound, as well as by my expectations of, and uncertainty about, the costs and benefits of continuing unconventional actions.

Following liftoff, my fed funds path through the end of 2016 remains flatter than some simple rules would suggest. In my projection, the reasons include the following:

- Although the unemployment rate by the end of 2015 is essentially at its long-run natural rate, broader measures of slack (including the share of long-term unemployment) take a bit longer to return to normal, reflecting the dynamics of the labor market.
- Some headwinds remain in 2016, such as constraints on credit availability for small businesses and foreign economic activity. These continue to reduce the equilibrium real interest rate relative

to its long-run value.

- In an environment in which short-term rates have been near zero for almost seven years, there are potentially some modest benefits to having an earlier liftoff but then a more gradual rate path than might normally be called for. These benefits include managing expectations and minimizing the potential for disruptions to global financial markets.

Respondent 6: My path for the federal funds rate, both before and after liftoff from the zero bound, is shaped by my expectation that the headwinds that have been holding back the recovery since the financial crisis will continue to exert a restraining, albeit abating, influence on aggregate demand for several years to come. In addition, inflation has been running well below our 2% longer-run objective, and I expect it to move only gradually back to 2%. To promote the attainment of our maximum employment and price stability objectives over the medium term I see it as necessary to pursue a highly accommodative policy throughout the forecast period. I would assess the equilibrium real funds rate at present to be substantially below my estimate of its longer run normal level of around 1.5%, and to move only some way back toward this level over the forecast period. I do not expect it to fully return to its longer-run normal level even by the end of 2017. This reflects factors such as (i) ongoing balance sheet repair by households and limited access to credit, which prevent households from taking advantage of very low interest rates to the same extent they would if their balance sheets had not been impaired; (ii) a continuing, albeit diminishing, high supply of savings, especially from emerging economies; (iii) fiscal policy that for several more years makes a smaller contribution to growth than its historical norm; and (iv) a temporarily depressed growth rate of potential GDP and associated weak growth of household incomes and income expectations. My estimate of the longer-run normal level of the nominal (and real) federal funds rate is 3.5% (and 1.5%), about the same as the mean long-run projection reported in the December Blue Chip Financial Forecasts survey and somewhat above estimates from the staff's three factor model. These low estimates likely reflect some pessimism about the prospects for longer-run growth, consistent, for example, with current Laubach-Williams estimates of trend GDP growth.

Respondent 7: The economy is picking up momentum. The labor market has made considerable, sustained progress toward our goal of full employment, and I expect steady progress toward that goal to continue. The recent decline in oil prices will temporarily hold headline inflation down in the near term. But as oil prices stabilize and the economy continues to expand, I anticipate that inflation will move higher. I continue to project a gradual rise in inflation over the forecast horizon to the Committee's 2 percent longer-run goal by early 2017. Given that monetary policy affects the economy with a lag, I believe appropriate monetary policy should reflect both actual and projected progress toward the Committee's goals. I project that the economy will be at full employment next year and that in 2015Q1 projected inflation between one and two years ahead will reach the Committee's goal of 2 percent. Thus, I believe it will be appropriate for the FOMC to begin raising the fed funds rate in 2015Q1.

Consistent with the Committee's forward guidance, I project the fed funds rate will rise gradually over the rest of 2015, similar to a path suggested by a Taylor 1999 rule with inertia. As the expansion strengthens, I believe it will be appropriate to raise interest rates at a slightly more rapid pace, described by a somewhat less inertial Taylor 1999 rule.

As a result of delaying liftoff until early 2015 and the inertia in my monetary policy rule, the federal funds rate target would be slightly below its longer-run normal level at the end of 2016, despite the fact that unemployment and inflation are both near their longer-run levels.

Consistent with recent Committee discussions, I believe it will be appropriate to initially target a 25 basis point range for the federal funds rate, with IOER at the top of the range and other tools—including ON RRP—preventing the funds rate from trading below the bottom end of the range. Depending on our experiences with these tools and our ability to control the federal funds rate, this

target range may persist for some time.

Respondent 8: We continue to believe it is appropriate that the Committee clearly communicate its commitment to a symmetric 2 percent inflation target by continuing highly accommodative policy. Our preferred way of doing this is for the FOMC to be clear that it will delay liftoff until labor market recovery is at least close to complete (as measured by a broad array of indicators) and we can be confident that the medium-term outlook for inflation is at least at 2 percent. We assume that the first rate increase will occur in March of 2016. At that time, our outlook has inflation two years ahead still somewhat below 2 percent. However, at that time we also expect that the downward effects of energy prices will have clearly dissipated and growth will be strong enough for us to be confident that the path for unemployment will support a continued upward trajectory for inflation. After liftoff, we believe it will be appropriate for the path of rate increases to be quite shallow, at least initially. This would allow the Committee time to assess how the economy is performing under less accommodative financial conditions and to observe whether inflation is still on track to achieving its target. We feel that a 2016 lift off date and a shallow path for rate increases is appropriate policy from a risk management perspective, as we view the costs of needing to retreat back to the zero lower bound in the face of unexpected weakness as much greater than those of letting inflation run modestly above 2 percent for a couple of years if demand is unexpectedly strong. This policy path results in the federal funds rate at the end of 2017 still being roughly 1 percentage point below our assumption for the long-run neutral rate even though our forecasts for unemployment and inflation are near their long-run policy goals.

Respondent 9: Inflation, growth, oil prices and foreign economic performance.

Respondent 10: The data suggest that there has been a sharp fall in the natural real rate of interest since 2007. We remain below maximum employment and below target inflation, even though the market real rate of interest (over any horizon) is much lower than in 2007. This means that the neutral real rate of interest – consistent with target inflation and maximum employment – has fallen by even more.

There are many reasons for this change in the neutral real rate of interest – but the main point is the change is likely to unwind over time – but only slowly and only partially. This judgment is borne out by the real yield curve, which is upward sloping (roughly 30 basis points over the next five years, and rising to somewhat over 1% from 2024 to 2034). Note that this real yield curve is roughly consistent with inflation break-evens of around 2%, which suggests that these market interest rates are reflective too of what’s happening with the neutral real rate of interest.

Put another way: I see the intercept term in the Taylor Rule as being a stochastic process with a lot of persistence. That intercept term is very low, and is likely to return to its long-run value only slowly.

I have also taken on board the staff’s downward revision of the underlying rate of inflation, as well as the staff’s view that overshooting of the unemployment rate below its natural rate will be helpful to bring inflation back to 2 percent.

Respondent 11: N/A

Respondent 12: My anticipation of liftoff in Q3 2015 is based on the expectation that inflation will not be at, or moving any more than gradually toward, 2 percent, but that financial stability considerations – in the context of continued steady growth and improvement in the labor market – will warrant a rate increase.

Respondent 13: Liftoff of the federal funds rate from the zero-lower-bound occurs in the third quarter of 2015. While at that time the economy is expected to be only one quarter away from reaching full employment, inflation is projected to run well below target. The removal of policy accommodation is gradual at first, but once inflation moves closer to target the federal funds rate is raised at a faster pace.

Respondent 14: My appropriate path for policy has the Committee starting to raise the funds rate in 2015Q1 as the economy continues to strengthen and inflation moves toward target. My path for the funds rate is within the range of prescriptions given by the monetary policy rules enumerated in the Tealbook and has the funds rate gradually rising over the forecast horizon to reach its long-run level of 3.75 percent by the end of 2017. I have lowered my longer-run normal value of the federal funds by 25 basis points based on my view that the long-run real rate of interest is somewhat lower.

Respondent 15: I remain convinced that following the 1999 Taylor rule with inertia (as is assumed in the Tealbook baseline) would be a mistake. The rule too often causes the unemployment rate to substantially overshoot its long-run sustainable level. We have demonstrated that we are unlikely to be able to reverse such overshooting without triggering a full-blown recession. (Any number of FRB/US simulations will not convince me otherwise; without meaning any disrespect, I am hard over on this one.) History teaches, instead, that the best way to prolong an expansion is to ease off the accelerator while the unemployment rate is still above its sustainable level. This approach was successful in the 1960s, the 1980s and, again, in the 1990s.

Without inertia, the 1993 and 1999 Taylor rules both call for early and rapid funds-rate increases: They say that policy is currently quite far from where it ought to be. This is so even if one makes reasonable allowance for a temporarily low neutral real interest rate. It is so even if one builds some “history dependence” into the rules, by making policy depend on lagged deviations of trimmed-mean inflation from target as well as current and near-term expected deviations.

Given my projections for the unemployment rate and inflation, non-inertial rules prescribe a normal or near-normal funds rate by the end of 2015. However, it’s my judgment that the rapid increases required to reach a 3.75-percent funds rate in that time frame would be seen as a major and unwarranted departure from past Fed behavior, would spook investors, and would harm financial intermediaries. A reasonable compromise is a series of rate hikes beginning in March, 2015, possibly—but not necessarily—utilizing some 50 b.p. hikes after an initial series of gentler, 25 b.p. increases. This would bring the policy rate up to its rule-prescribed level during 2016. The unemployment rate at that point is likely to be below the natural rate, but only modestly so. Subsequently, continued low unemployment and somewhat above-target inflation mandate that the funds rate overshoot its long-run level.

I’m very uncomfortable with the notion that we can delay liftoff without ill effect if we promise aggressive tightening down the road. Investors will pay attention to the “delay liftoff” part of the message and discount the promise of aggressive future action. With markets unprepared for rapid rate hikes, it will, indeed, in the end prove difficult to follow through on the earlier commitment.

Respondent 16: By early 2015, the unemployment rate will be close to its long-run value. At that time I also see inflation accelerating and approaching its long-run value. Lift-off should occur in Q1/2015.

Respondent 17: I believe that data available at the April 2015 will indicate that labor markets are significantly improved and core inflation is increasing. Accordingly, I believe that we will want to begin raising the policy rates then to keep inflation from rising too rapidly over the next couple of years.

Forecast Narratives

4(a). Please describe the key factors shaping your central economic outlook and the uncertainty and risks around that outlook.

Respondent 1: My forecast for real GDP growth is characterized by above-trend growth of 3 percent in the second half of 2014, in 2015, and in 2016. Real GDP growth is supported by income growth from rising employment and wages, rising household wealth, accommodative financing conditions, and the ending of fiscal drag. Real GDP growth is likely to slow in 2017 as the economy operates at full capacity. As the remaining economic slack declines, I expect the unemployment gap to be nearly closed by the end of 2015. My inflation outlook projects a gradual rise in inflation coinciding with the removal of slack from the economy.

Respondent 2: Since the September SEP, real activity indicators have signaled that the U.S. economy has been relatively strong, even as other areas of the global economy have been weak. Consequently, we now expect real GDP growth in the second half of the year to average close to 3 1/2% (annual rate). This strength has been evident in private domestic demand, particularly in real PCE, which appears to be rising about 3 1/4% in the current quarter after incorporating the November retail sales data. Consumer spending appears to be supported by a stronger labor market, lower energy prices, and higher net worth. In contrast, business investment appears to have been somewhat subdued so far in the current quarter.

We project growth of real GDP in 2015 and 2016 to be moderately above its potential rate, even though our forecast is somewhat below that from the September SEP. Supported by the factors mentioned in the previous paragraph, we see growth of real PCE remaining solid over the forecast horizon. The relative strength of consumption is expected to support somewhat stronger business investment, despite weaker investment in oil exploration and drilling stemming from the oil price decline. However, these positive developments are expected to be offset by a downward adjustment of net exports, as a stronger dollar and continued subdued growth in some major trading partners lead to stronger import growth and slower export growth. In 2017, most of the economic slack is expected to be dissipated, and thus we expect growth to be near its potential rate.

With above-potential growth, we expect the unemployment rate to continue to fall to around 5 1/4% by 2015Q4 and to around 5% (our new estimate of the longer-run normal unemployment rate) by 2016Q4. The pace of decline over this period is somewhat slower than we have seen in the past couple of years, reflecting our assumptions of a very gradual increase in the participation rate and somewhat higher productivity growth. With unemployment at its longer-run level and real growth at potential, we project unemployment to remain around 5% in 2017, although there is still significant probability that it could decline somewhat further in that year.

Because of the decline in energy prices, we expect overall PCE inflation to be very low in the near term—it seems very likely that it will be negative in 2015Q1. Consequently, overall inflation for 2015 (Q4/Q4) is likely to be only around 1%. However, we see the impact of the oil price decline as temporary and do not anticipate that it will not pass through much to core inflation; therefore, we project core inflation to remain around 1 1/2% in 2015. After that, we expect both overall and core PCE inflation to rise gradually 1.8% in 2016 and 2% in 2017, reflecting the reduction of slack, some rises in marginal costs of production, and well-anchored long-term inflation expectations that act as a gravitational force pulling actual inflation toward the FOMC's long-term objective.

The risks to the forecast for growth appear to be reasonably well balanced. With an improving labor market and improved sentiment, we could very well see a stronger revival of both consumer spending and housing in 2015 and 2016 than we now expect. If so, that would likely provide an additional boost to business investment spending. However, the U.S. economy may be more negatively affected by weakness abroad than assumed in our central forecast and we may be underestimating the downside effects of reduced oil and gas exploration and production. The risks to the inflation forecast

also appear to be roughly balanced. We may not have adequately taken into account the effect of dollar appreciation and slower growth abroad on inflation. However, it is possible the slack may be reduced more quickly and begin to have a stronger impact on inflation than we have anticipated.

Respondent 3: I see continued gradual strengthening of growth and strong job creation. I expect inflation to return to the 2% objective as the economy strengthens and slack declines. I see weak global growth as the principal risk to the forecast. In the near term, I see the effects of the higher dollar on growth fully offset by lower energy prices, low rates, and high asset prices.

Respondent 4: I am holding to my previous forecast which calls for a near 3 percent run-rate in output growth over the next few years, a further reduction of labor market slack, and inflation that only gradually converges to target.

Growth over the medium term is primarily driven by stronger consumption growth, supported by ongoing improvements in the labor market and a more robust pace of disposable income growth, further improvement in consumer sentiment, and lower energy prices. While lower oil prices negatively impact energy-related investment, conditions remain supportive for capital investment in other sectors.

The risks to my growth outlook remain balanced. A stronger dollar and weak foreign GDP growth could restrain export growth and slow the pace of domestic industrial activity. On the other hand, many major economic indicators (notably the recent employment indicators) may be signaling an even faster acceleration than I have in my baseline outlook.

I judge the inflation risks to be balanced as well. Sharply lower energy prices and a stronger dollar are likely to lead to lower headline inflation over the near-term, and may spill into the underlying inflation measures a little more than I have marked into my baseline forecast. The absence of wage and price pressure underlies my assumption that the current level of the U-3 unemployment rate is a poor guide to the amount of slack still remaining in the labor market. But the speed of the decline in the U-3 measure suggests the potential for more wage and price pressure than is currently reflected in my baseline projection.

Respondent 5: The economy is still recovering from the severe housing collapse and financial crisis. Recoveries from these types of episodes are associated with sustained weakness in aggregate demand through a variety of channels, which policy has only partially offset. Many of the associated remaining headwinds are slowly easing:

- Housing has been and continues to be a headwind. However, with household balance sheets as well as consumer credit conditions improving, I expect this to abate;
- The drag from contractionary federal fiscal policy has largely dissipated;
- Policy uncertainty is back to fairly normal levels.

The one headwind that is not abating is global economic weakness. Growth in many of the world's largest economies has disappointed. Together with continued geopolitical tensions, weak global growth remains a major concern and source of downside risk for my forecast. The relatively strong performance of the U.S. economy compared with that of the rest of the world has resulted in an appreciation of the dollar. I expect this appreciation to be a drag on net exports and GDP growth. This downside risk is partly offset by improvements in the supply of energy which has contributed to a decline in energy prices.

In this environment, I expect the economic recovery will proceed at a moderate pace, which will yield continued progress on closing output and unemployment gaps over the next couple of years. Even with substantial monetary stimulus, it will take a sustained period of above-trend growth to return the economy to full employment.

In terms of inflation, continued slack in labor and goods markets and subdued commodity and import prices should keep inflation below the FOMC's 2 percent inflation target for the next couple

of years. Well-anchored inflation expectations and diminishing slack eventually pull inflation back to our objective.

Respondent 6: I expect GDP growth to settle in at a little below 3 percent through 2016, before slowing toward its longer-run normal value. In my projection, the unemployment rate continues to decline, reaching its longer-run normal value by late 2016, and inflation moves slowly back toward the Committee's 2 percent longer-run objective. Key factors propelling this continued expansion are: monetary policy that remains quite accommodative for some time; a further easing of credit constraints and the continued repair of household balance sheets; lower energy prices and the resulting boost to real income; and even a modest impetus from mildly expansionary fiscal policy. In addition, aggregate activity should be supported by a favorable self-reinforcing dynamic in which increased confidence that the economy is at last returning to normal makes firms more willing to hire and invest and households more willing to consume and buy houses. I view the recent acceleration in monthly payroll gains as a sign that this favorable dynamic is probably already underway. With regards to the supply-side of the real economy, I have revised my views somewhat from September. In particular, I now see the combination of solid job growth, a substantial decline in the unemployment rate, and only modest GDP growth over the past year or so as signaling that the natural rate is somewhat lower than I previously thought, and so have marked down my longer-run projection of the unemployment rate a bit. In addition, I continue to expect that cyclical factors will help to keep the labor force participation rate roughly flat despite the downward pressure from demographic factors. Taken together, these factors imply that the current unemployment rate by itself somewhat understates the actual level of labor and product market slack, which I view as still substantial and even a touch higher than I judged in September. I see this substantial slack as helping to explain why inflation has persistently run below the FOMC's target, and expect that as slack is taken up inflation will gradually move up to 2 percent (although not quite by 2017). In making this forecast, I assume that inflation expectations remain well-anchored despite the recent declines in market-based measures of inflation compensation, which I think have been temporarily depressed in part by declines in oil prices and technical factors.

Respondent 7: Economic growth and improvements in labor markets are gaining momentum. Fundamentals supporting the expansion remain favorable, including highly accommodative monetary policy, improving household balance sheets, strengthening labor markets and lower oil prices that support consumer spending, easing fiscal headwinds, and further relaxation of tight credit conditions. My business contacts are optimistic, with a majority planning to increase capital spending plans and a near majority planning to hire additional workers. Overall, I see these forces contributing to above-trend growth and further improvements in labor markets over the next few years. By the end of 2017, my forecast calls for the economy to be at its steady state.

The year-over-year headline PCE inflation rate will move temporarily lower due to falling oil prices, but it will gradually move back up as oil prices stabilize. I anticipate limited pass-through to core inflation from the drop in oil prices. While a few measures of long-term inflation compensation and expectations have declined a bit, the declines have been relatively small and the measures remain within recent levels. Other measures have remained stable, and, in my judgment, inflation expectations remain anchored. These stable inflation expectations along with an improving economy are consistent with inflation moving back to the 2 percent longer-run objective by early 2017. As inflation increases and the expansion continues, I expect wage growth to rise as well.

I view overall uncertainty as roughly comparable to historical norms of the last 20 years. As described above, while there are a number of risks to my outlook, I view them as broadly balanced for both the real economy and inflation.

Respondent 8: The key factors shaping our forecast are the same as they have been for some time. Accommodative monetary policy, continued improvement in household and business balance

sheets and access to credit, and the removal of fiscal restraint should allow domestic demand to gain momentum as we move through the projection period. Pent-up demand for capital goods and consumer durables should provide further impetus to growth.

These fundamental factors supporting activity are assumed to generate growth moderately above potential over the next 2 years. As monetary policy normalizes and cyclical dynamics run their course, growth moderates back towards potential in 2017. Our path for GDP closes resource gaps in 2016. Resource slack thus is expected to exert a diminishing downward influence on inflation as we move through the projection period; furthermore, we assume inflation will be pulled up by inflation expectations. In order to achieve our inflation target, we assume policy normalization does not begin until the inflation outlook is more clearly headed back towards 2 percent, and that, at least initially, the path for rate increases will be shallow. Given the normal inertia in the inflation process, we could well see some modest overshooting of target beyond the projection horizon.

See the description of uncertainties and risks in section 2(b) above. In addition to those factors, there is a good deal of uncertainty over how resilient the economy will be to the removal of monetary accommodative and over the potential for inflation to rise more rapidly as growth gains momentum. However, as noted in 3(c) above, we see the costs of rate increases substantially weighing on activity and potentially pushing us back to the zero lower bound as being much higher than the costs of inflation moving up more quickly than anticipated. We have set our monetary policy assumptions accordingly, with a 2016 liftoff and shallow path for rate increases, to better balance the probability-weighted costs.

Respondent 9: The fan charts in Tealbook A remind one of the enormous uncertainty about forecasts even a year ahead. This allows me to put more weight on impressions that I have formed of the general direction of developments, based on the past and on recent changes in key macro variables and trends.

Respondent 10: There is a risk of a premature tightening of monetary policy that would degrade our performance on inflation.

Respondent 11: N/A

Respondent 12: My expectatoin continues to be for a path of moderate recovery as labor markets continue to improve, household deleveraging progresses, and as fiscal headwinds diminish or disappear. The continued absence of broad-based upward pressures in wages suggests that there is still a non-trivial amount of labor market slack in the economy. Downside risks to GDP largely emaate from global developments. My baseline expectation would be for the Eurozone to continue to skirt an actual recession and deflation, and for China's GDP to slip only modestly, but there do seem continuing risks of renewed sovereign debt issues in the Eurozone and the potential for a more significant decline in Chinese economic peformance, and possibly, another round of stganation in Japan. While current and anticipated monetary policy action should stave off deflationary threats in the Eurozone and Japan, some risk remains.

Respondent 13: The projected acceleration in the pace of GDP growth during the second half of this year appears to be well underway. This acceleration is helped by more favorable background factors – most notably lower long-term interest rates and oil prices – than previously thought. Consumer spending is supported by steady improvements in the labor market, and by high real incomes from the decline in energy prices. In this context, consumers' confidence is increasing, and a further boost to consumption should occur from the release of pent-up demand. The ongoing pickup in the pace of economic activity, however, remains relatively modest. Growth in residential investment is still disappointing, and more robust gains in housing remain a forecast at this point. Moreover, while

the interest rate environment is highly supportive, demand in the near- to medium-term will be restrained by an appreciating dollar. Too, downward revisions to activity in the rest of the world imply additional drag to growth from net exports. The acceleration in the pace of GDP growth is occurring thus far in a context of low inflation. There is little indication of emerging wage pressures, even when considering only the wages of new hires, which are arguably more responsive to cyclical conditions.

Labor market developments are showing more improvement than we had previously expected. We continue to view the recent readings of the unemployment rate as understating the extent of labor market slack, though not by a large amount. As the economy approaches full employment, we expect the relationship between the unemployment rate and GDP growth to revert to historical norms, with a more pronounced cyclical rebound in labor force participation. As a result, we project a gradual decline in the unemployment rate, even with GDP growth in 2015-16 in the 2 1/2 to 2 3/4 percent range. By the end of 2017, the unemployment rate is expected to be somewhat below the level consistent with full employment, with inflation still running below target. In a context of growth modestly above potential and little inflationary pressures, monetary policy can afford to be patient at first when removing policy accommodation. As inflation gets closer to target, the removal of policy accommodation occurs at a faster pace.

Recent data releases concerning real economic activity have been, overall, stronger than anticipated. As a result, the risks to the growth outlook are becoming more balanced. However, we weight the downside risks somewhat more heavily, as adverse scenarios where policy may not provide an adequate offset – for example if the rest of the world experiences slower growth than in our modal forecast – are still present. In this context, the risks to the unemployment rate outlook are broadly balanced, as disappointing growth outcomes are balanced by the possibility that downside surprises to the unemployment rate will persist. Risks to the inflation outlook are skewed to the downside, since the extent to which long-run inflation expectations can anchor inflation remains uncertain.

Respondent 14: Based on recent data, I expect the pace of output growth to be above 3 percent in the second half of 2014, and for that momentum to carry over into 2015 as the headwinds that have been holding down growth recede further. The pace of growth then eases, but remains above my estimate of its longer-run trend of 2.4 percent over the forecast horizon. With fairly modest headline growth over the next three years, I anticipate the unemployment rate will fall to 5.3 percent by the end of 2016, which is my estimate of its longer-run trend. With appropriate monetary policy firming, I do not anticipate that the unemployment rate will move significantly below the natural rate in 2017. I anticipate that headline inflation will be held down some in early 2015 by the recent fall in oil prices. By 2016, headline and core inflation are at 2 percent. Inflation stays anchored around my target of 2 percent in response to tighter monetary policy than that anticipated in the Tealbook.

In my view, the substantial liquidity that is now in the financial system continues to imply a risk that inflation will rapidly accelerate to unacceptable levels and that inflation expectations may become unanchored. To ward off these developments, the FOMC will need to commence a steady tightening of monetary policy, beginning in 2015Q1.

Respondent 15: Highly accommodative monetary policy, improved household finances, reduced fiscal drag, and tame commodity prices have given us a rapidly improving labor market. Wage growth has gradually increased, and is likely to rise at an increasing rate with further reductions in the unemployment rate. Faster wage gains and lower consumer energy prices will boost real household incomes and spending, contributing to a cycle of rising demand and employment. Low headline inflation should not be a concern as long as nominal demand is projected to remain on a track consistent, over the longer term, with our 2 percent inflation objective.

To prevent a new boom-bust cycle from taking hold, it is essential that accommodation be gradually withdrawn as we near our full-employment and price-stability objectives. Progress toward price stability is best measured by the recent history and near-term expected trajectory of a core inflation

measure, such as the Dallas Fed's trimmed-mean PCE inflation gauge. Fluctuations in headline inflation in response to supply-side shocks are inevitable and, indeed, desirable. They are sometimes persistent. Even a fair coin will sometimes come up heads eight times in a row.

Downside risks center on a rapidly cooling Chinese property market, conflict and tensions in the Middle East and Ukraine, and the fraying of public confidence in Euro-area institutions and policies.

Respondent 16: As I anticipated, the weak economic performance in Q1/2014 was temporary. I see sufficient momentum as well as more than ample monetary accommodation to propel unemployment to a rate lower than its long-run value and an acceleration of inflation.

Respondent 17: Population growth in the 16-64 age group will be below 0.5 percent each year. Real GDP per employee has been rising about 1 percent per year and is unlikely to accelerate significantly over the forecast period. My estimate of the medium trend in real GDP is accordingly 1 3/4 percent, well below what we have experienced in the past. My forecast is that growth will be modestly above trend, and the unemployment rate will fall below its long-run value by the end of next year.

Forecast Narratives (continued)

4(b). Please describe the key factors causing your forecasts to change since the previous SEP.

Respondent 1: The information received since September has not materially affected my outlook for real GDP. Incoming data does suggest a lower path of the unemployment rate going forward. Under my view of appropriate monetary policy, liftoff occurs in the second quarter of 2015.

Respondent 2: Real GDP growth in the second half appears to be stronger than we expected in September, leading us to raise moderately the projection for the entirety of 2014. We expect the growth of private domestic final demand to be similar in 2015-16 as in our September projection, supported by continued still-accommodative monetary policy, lower energy prices, and higher household net worth. However, greater dollar appreciation and weakness in some major trading partners has led us to reduce notably our projection for net exports over 2015-16. Overall, these changes have led to a modestly lower real GDP growth path in 2015-16.

The labor market generally was stronger than we expected in September, with the unemployment rate declining somewhat more than we had projected. In addition, as stated earlier, we have lowered our point estimate for the longer-run normal unemployment rate based on our analysis of recent labor conditions and wage trends. Consequently, our projected path for the unemployment rate is below that of the September SEP. These changes also mitigate a tension that our forecast has faced in recent cycles: to avoid projecting a substantial undershoot of the unemployment rate, we had to make assumptions concerning the average work week and the participation rate that were increasingly at odds with recent trends in those variables. Given the changes we have made in our projections, the paths of average hours and participation now are more consistent with the recent data.

Energy prices have declined much more than we expected in September, leading us (as almost all forecasters) to reduce our near-term overall PCE inflation forecast. At this time, we do not project a persistent effect from the recent sharp decline in energy prices. In addition, despite the fall in market-based inflation compensation, we continue to assume that inflation expectations remain anchored at the FOMC's longer-run objective. Consequently, we have made little change to our core PCE inflation projection as well as the medium-term overall inflation forecast.

Respondent 3: N/A

Respondent 4: I have marked up my growth forecast in 2015 and 2016 modestly in response to a sharp drop in energy prices. I expect this new, lower level of energy prices to persist throughout the forecast horizon which will provide a boost to consumer spending over the medium term. Energy-related investment is negatively impacted by lower energy prices and I expect this to provide a slight offset over the next 3 quarters. I have lowered my near-term inflation projection significantly in response to the falling cost of energy.

I have taken on board some of the surprise improvement in the unemployment rate since my September submission and have the unemployment rate converging to 5.2 percent early in 2016. However, I currently judge the more elevated level of the U-6 measure of unemployment as a more reliable gauge of labor market slack and I expect continued downward pressure on wage and price growth even after the U-3 measure of unemployment reaches its longer-term level.

Respondent 5: Since September, I have made only modest changes to the broad contours of my forecast. I have revised down my GDP growth forecasts for 2015 and 2016, but this reflects disappointing readings on productivity and weaker near-term potential growth. Projected growth in

aggregate demand remains at least as strong and my unemployment forecast for the next three years is unchanged compared to September.

In addition, recent declines in commodity, energy, and import prices will put substantial downward pressure on headline inflation. Because of this, I now expect headline inflation to run more substantially below our 2 percent target over the next two years than in September. I expect these commodity, energy, and import price movements to have a much smaller effect on core inflation and to be largely offset by a somewhat greater degree of firming in wage inflation. Thus, I have made little change to my medium-term outlook for core inflation.

Respondent 6: My forecast has changed only a little since September, although my projected path of the unemployment rate is slightly lower as a result of my reassessment of the natural rate.

Respondent 7: The contours of my forecast are little changed from the previous SEP. The biggest surprise has been the steep decline in oil prices, which I see as largely supply-driven. The oil price drop will weigh on headline inflation in the near term, but I continue to anticipate that inflation will gradually return to our target, given the underlying momentum we are seeing in the real economy. The unemployment rate has moved down slightly more than expected, causing me to slightly lower the path for the unemployment rate this year and next. GDP growth has been somewhat higher in the second half of the year, so I moved up my projection for 2014. The rest of my growth projection has not changed.

Respondent 8: Stronger incoming data have caused us to revise our 2014 growth projections up and our unemployment projection down. Our forecasts for growth in subsequent years have not changed and our lower path for unemployment in 2015-2017 mainly reflects the lower starting point. Our forecasts of core inflation are little changed, but we've marked down the near term total inflation outlook to reflect the drop in energy prices.

Respondent 9: I've been impressed by better economic performance, improvements in sentiment, and lower oil prices, although over the longer run I'm concerned about economic performance in the rest of the world.

Respondent 10: There has been little change in my forecast.

Respondent 11: N/A

Respondent 12: No major changes in forecast since September – jobs numbers in the intervening months have strengthened my expectation for continued moderate growth, while developments abroad have increased downside risks modestly.

Respondent 13: Since September, the projected pace of GDP growth over the forecast horizon has not changed materially. However, the expected path for the unemployment rate is more favorable, as a result of lower-than-expected unemployment rate readings so far this year. Still, by the end of 2017 the expected level of the unemployment rate is the same as in the September forecast. The projected federal funds rate shows a slightly more elevated path over the course of 2015-16, to reflect the lower projected rate of unemployment during that period. There have been no significant changes to the inflation outlook, although core inflation in the near term is expected to be somewhat lower as a result of passthrough from declining energy prices.

Respondent 14: The incoming data has led me to revise up my estimate of 2014H2 growth and to revise down my estimate of inflation in the near-term.

Respondent 15: Real growth in the second half of 2014 appears to be coming in stronger than I and the Tealbook had expected in September. The unemployment rate is on a somewhat steeper downward trajectory. The sharp drop in oil prices we've seen over the past few months was unanticipated and has led me to revise downward my near-term headline inflation projection. I have the policy rate rise a bit faster than before, to rein in growth and limit overshoot of the unemployment rate. Finally, I've become convinced that changes in the demographic composition of the population and in its educational and skills attainment are likely to give us a slightly lower longer-run sustainable unemployment rate than previously assumed.

Respondent 16: I made no significant changes to my GDP growth forecasts. Unemployment rate forecasts for 2015 and 2016 were reduced to 5.2% from 5.5% and 5.6%, respectively. Current information on the unemployment rate combined with my GDP growth forecasts, especially the strong growth that I forecast for 2015, are the primary reasons for my changes. Concerning PCE inflation, I reduced my forecast from 1.7% to 1.4% for 2014 to reflect already available information. This reduction also led me to reduce my PCE inflation (core as well) forecast for 2015 from 2.4% to 2.2%.

Respondent 17: Recent data on employment, consumer spending, and investment in equipment and software have led me to raise my GDP forecast for 2014. I see just a slight acceleration in consumer spending for the coming year from its 2 1/4 percent trend since the recession. The fall in oil prices has led me to lower my near term forecast for headline inflation.

Forecast Narratives (continued)

4(c). Please describe any important differences between your current economic forecast and the Tealbook.

Respondent 1: The appropriate path for the federal funds rate in 2015, 2016 and 2017 in my forecast lies above the Tealbook forecast. Nevertheless, I expect somewhat faster real GDP growth than Tealbook in 2015 and 2016 and somewhat higher inflation at least through 2017. I expect the unemployment rate to decline at a slower pace than Tealbook.

Respondent 2: The general contours of our and the Tealbook forecasts for real GDP growth are roughly similar, so the differences are more in the details. Our forecast for real GDP growth in 2015 is modestly above that of the Tealbook. The most notable factor for this difference appears to be business fixed investment. The Tealbook projects slower growth in business fixed investment in 2015 than in our forecast; the reason for this difference is not immediately clear, but it may in part reflect the Tealbook assessment that the capital stock is fairly close to levels consistent with its assessment of potential growth. This factor is offset partially by faster consumption growth in the Tealbook forecast, a long-standing difference with our forecast, in part reflecting stronger wealth effects in the Tealbook forecast. For 2016, real GDP growth in our projection is moderately below the Tealbook forecast: again, our consumption forecast is lower than the Tealbook's, while our investment forecast is higher.

More fundamental differences in the two forecasts are in the paths of the unemployment rate and inflation. The Tealbook forecasts that the unemployment rate will be below its natural rate assumption for a prolonged period, whereas we project the unemployment rate to fall to its natural rate and then remain there (in addition, there is now a small difference in the longer-run unemployment rate in the two forecasts). This difference appears to reflect differing views about inflation dynamics. In the Tealbook, with the underlying inflation rate below the FOMC longer-run objective, a prolonged period of low unemployment (and a positive output gap) appears to be necessary to induce inflation to rise toward the longer-run inflation goal—even then, inflation does not approach the goal until 2019. In our framework, with anchored inflation expectations and little slack by the end of 2016, we anticipate inflation to be at the longer-run goal by 2017, and thus unemployment is not expected to fall below the natural rate. The faster return of inflation to its goal in our forecast reflects our assumptions about inflation persistence and the strength of attraction provided by anchored inflation expectations.

In terms of the uncertainty and risk assessment, we see some differences between the two projections. On the real side, we continue to see higher uncertainty than normal whereas the Tealbook sees uncertainty at near normal levels. This assessment reflects our view that the unusual nature of the current expansion as well as a policy environment that is constrained by the effective lower bound leaves uncertainty about real activity above even the more elevated SEP standard associated with the 20-year window of forecast errors. In another contrast, we see the risks around the real activity projections as roughly balanced rather than tilted to the downside as in the Tealbook: the stronger growth in the second half signals a significant risk that stronger expansion dynamics have been established as well as the possibility of a positive supply shock associated with lower energy prices that offsets the negative risks cited by the Tealbook. As for inflation, although our uncertainty assessment is similar to the Tealbook, we still see the risks as roughly balanced: although the decline in longer-term inflation compensation and low inflation in other areas pose downside risks to the forecast, the possibility that slack could be dissipated more quickly than anticipated offsets those risks.

Respondent 3: N/A

Respondent 4: My growth forecast runs higher than the Tealbook in 2015, but isn't materially different for other years. At this time, I am not inclined to mark in much influence from the rising

dollar and slower global growth into my baseline projection. My headline and core inflation forecasts run about $\frac{1}{4}$ percentage point above the Tealbook over the forecast horizon. It is still my view that inflation expectations remain well anchored at a target-consistent level of 2 percent.

Respondent 5: My forecast is broadly similar to the Tealbook projection. One notable difference is that the Tealbook has a much more protracted return of inflation to the FOMC's stated 2 percent objective. Also, the Tealbook assumes an overshoot of employment above full employment (that is, the unemployment rate falls significantly below the natural rate).

Respondent 6: I believe that the natural rate of unemployment and the equilibrium real interest are both a bit lower than the staff estimates, but these are minor differences.

Respondent 7: My forecasted outcomes are broadly similar to those in the Tealbook. I expect that GDP growth will proceed at an above-trend pace from 2014H2 through 2016 and the unemployment rate will continue to decline. However, my forecast calls for somewhat more inflationary pressure than the Tealbook forecast: I expect that inflation will return to our 2 percent longer-term objective by early 2017. Compared with Tealbook, this firmer path for inflation calls for a steeper path for the funds rate.

Respondent 8: We assume that the first increase in the funds rate will occur early in 2016, three quarters later than the Tealbook. Our rate of increase after liftoff is similar. Accordingly, at the end of the projection period our assumed level of the funds rate only reaches 2.63 percent.

Our projection for growth in 2014:H2 is about the same as the Tealbook. Our projection for growth in 2015-2017 averages about $\frac{1}{4}$ to $\frac{1}{2}$ percentage point stronger than the Tealbook. The difference essentially reflects our somewhat faster assumption for the growth rate in potential output over that period. Our projection for inflation is similar to the Tealbook.

Respondent 9: I think the Tealbook is a bit less impressed by the changing pace and feel of US economic performance than I have been.

Respondent 10: N/A

Respondent 11: N/A

Respondent 12: No major differences – only a few tenths of a percentage point one way or the other.

Respondent 13: The two forecasts are conditioned on similar policy assumptions, and have similar outcomes both in terms of economic activity and inflation.

Respondent 14: My forecast calls for higher inflation and tighter monetary policy over the forecast horizon than the Tealbook

Respondent 15: I believe longer-term inflation expectations are currently well anchored at a rate consistent with the Committee's inflation objective. I'm convinced that in the near term inflation responds to changes in slack as well as the level of slack. I prefer to use the trimmed-mean as my measure of core inflation, rather than strip out food and energy price increases. For all of these reasons, I see inflation rising farther and faster than does the Tealbook.

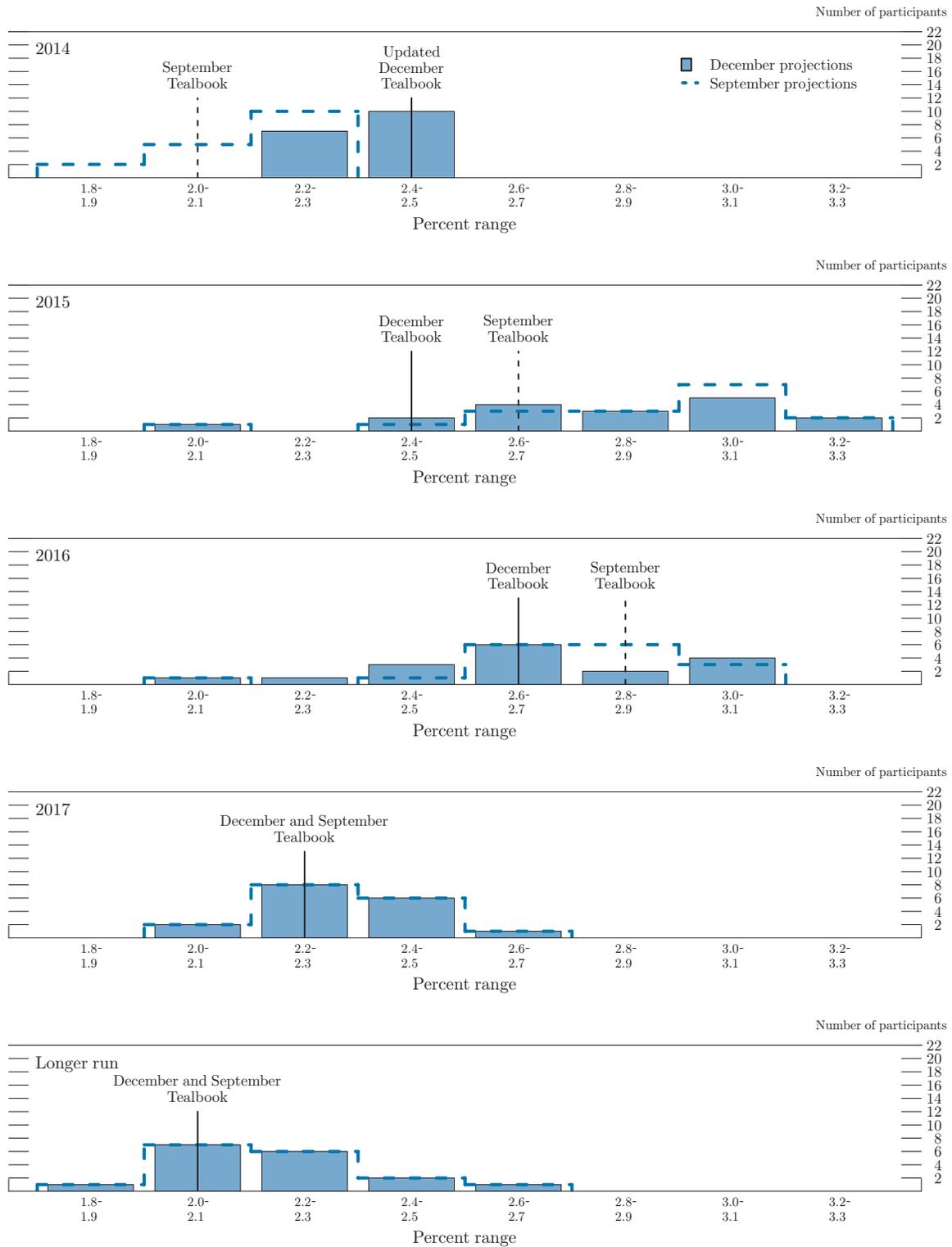
At the same time, I believe that increases in the unemployment rate are difficult to contain once they begin. An implication is that the risks to misestimating slack are asymmetric: It is substantially more dangerous to overestimate slack than to underestimate it.

Because I anticipate a higher inflation path than does the Tealbook, and because I see both substantially less benefit from overshooting full employment and substantially greater risk, I believe it is appropriate for monetary policy to move more rapidly to a neutral policy stance.

Respondent 16: For 2015, I expect relatively higher GDP growth than the Tealbook (3.2% versus 2.5%) and higher inflation (2.2% for both PCE inflation and core PCE inflation versus 1.0% and 1.5%, respectively). The inflation differences narrow for 2016 and 2017. The other important difference occurs for the unemployment rate, which stems for my long-run unemployment rate forecast of 5.8% versus the Tealbook forecast of 5.2%. During 2017 I forecast a reversal of the overshooting of the unemployment rate, while the Tealbook forecast is for a further decline in the unemployment rate. My forecast for the unemployment rate is 5.7%, while the Tealbook forecast is 4.9%.

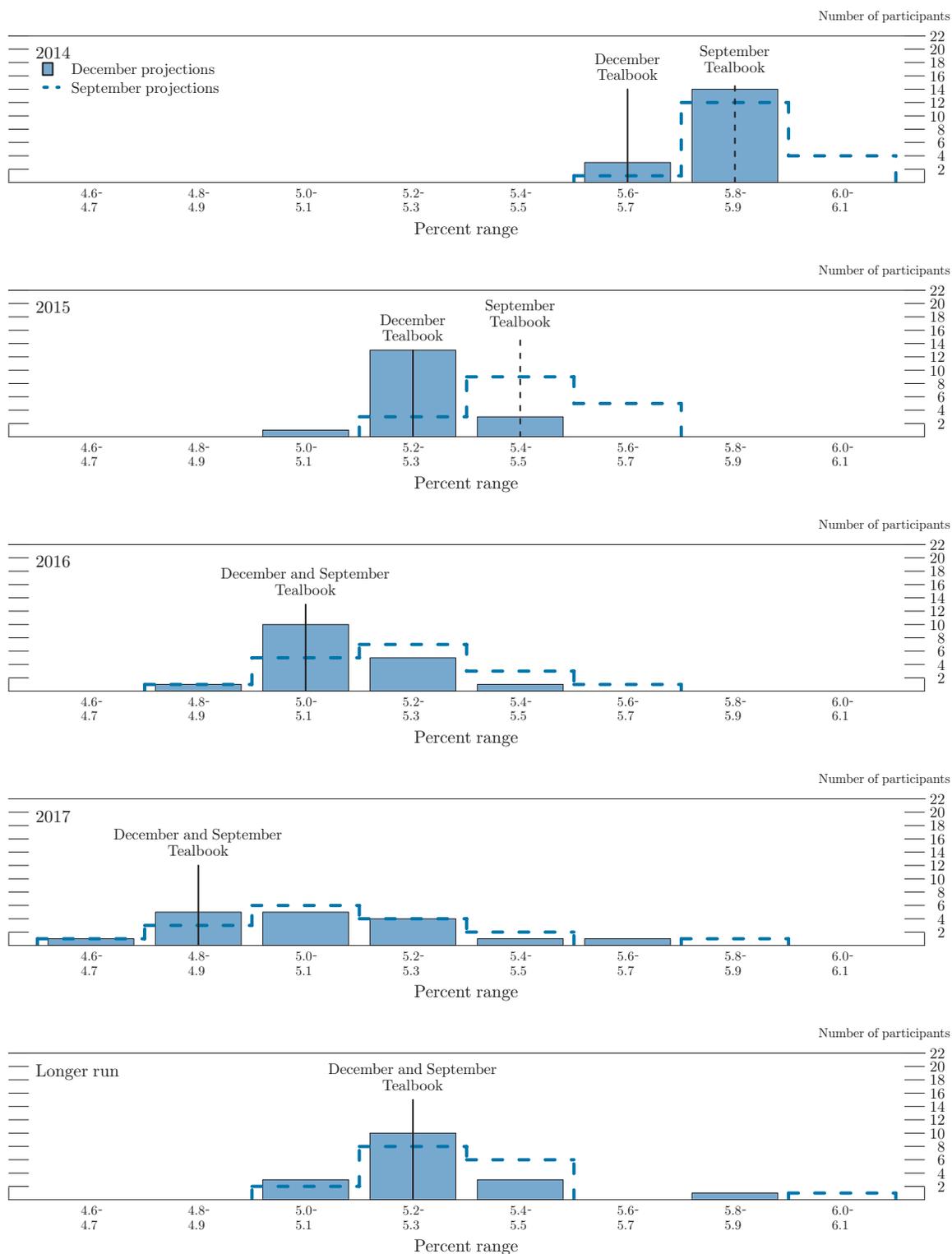
Respondent 17: My forecast for real growth is less than the Tealbook for 2015 and 2016, in large part due to my softer forecast for consumer spending. I expect inflation to return to target slightly faster than the Tealbook.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2014–17 and over the longer run



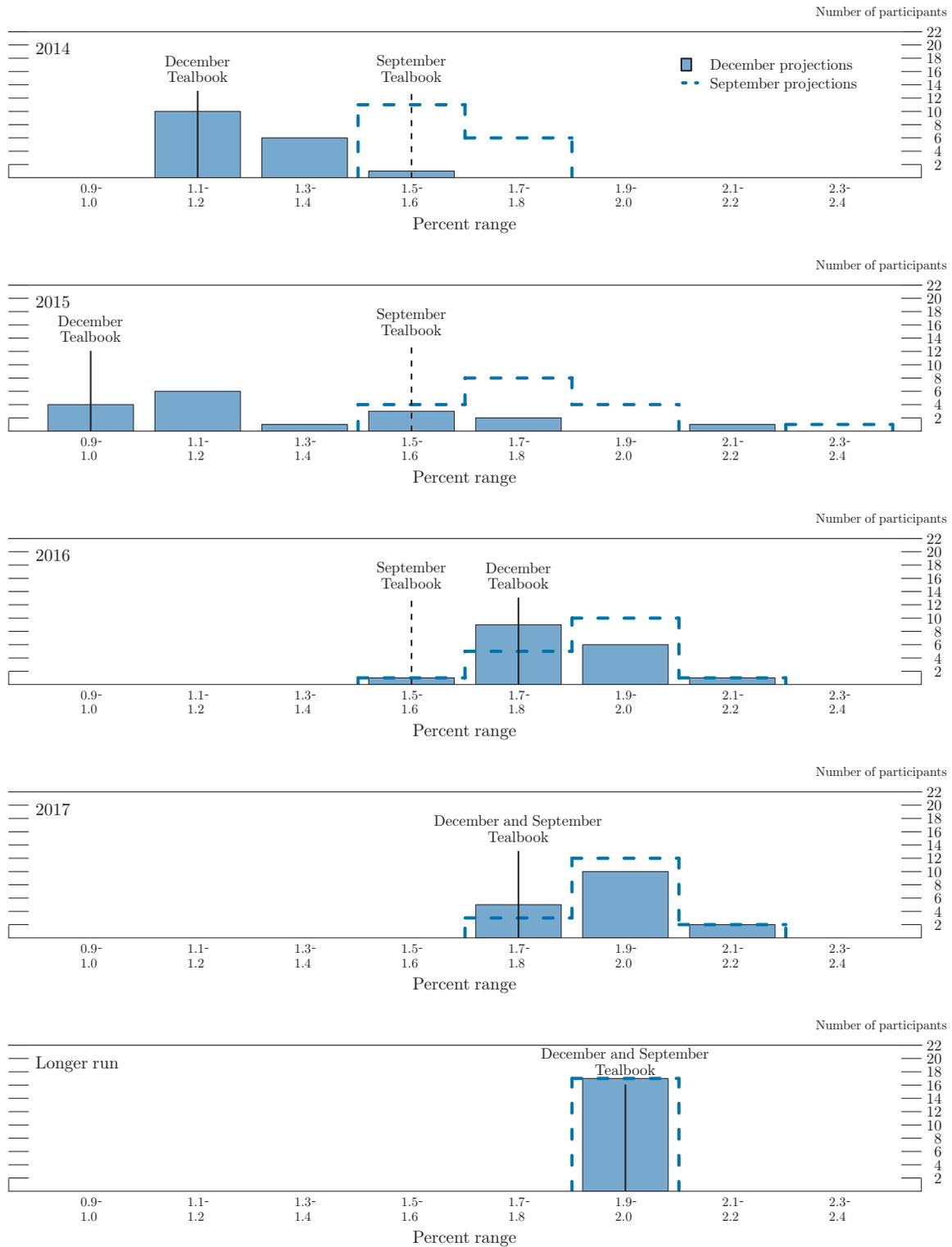
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2014–17 and over the longer run



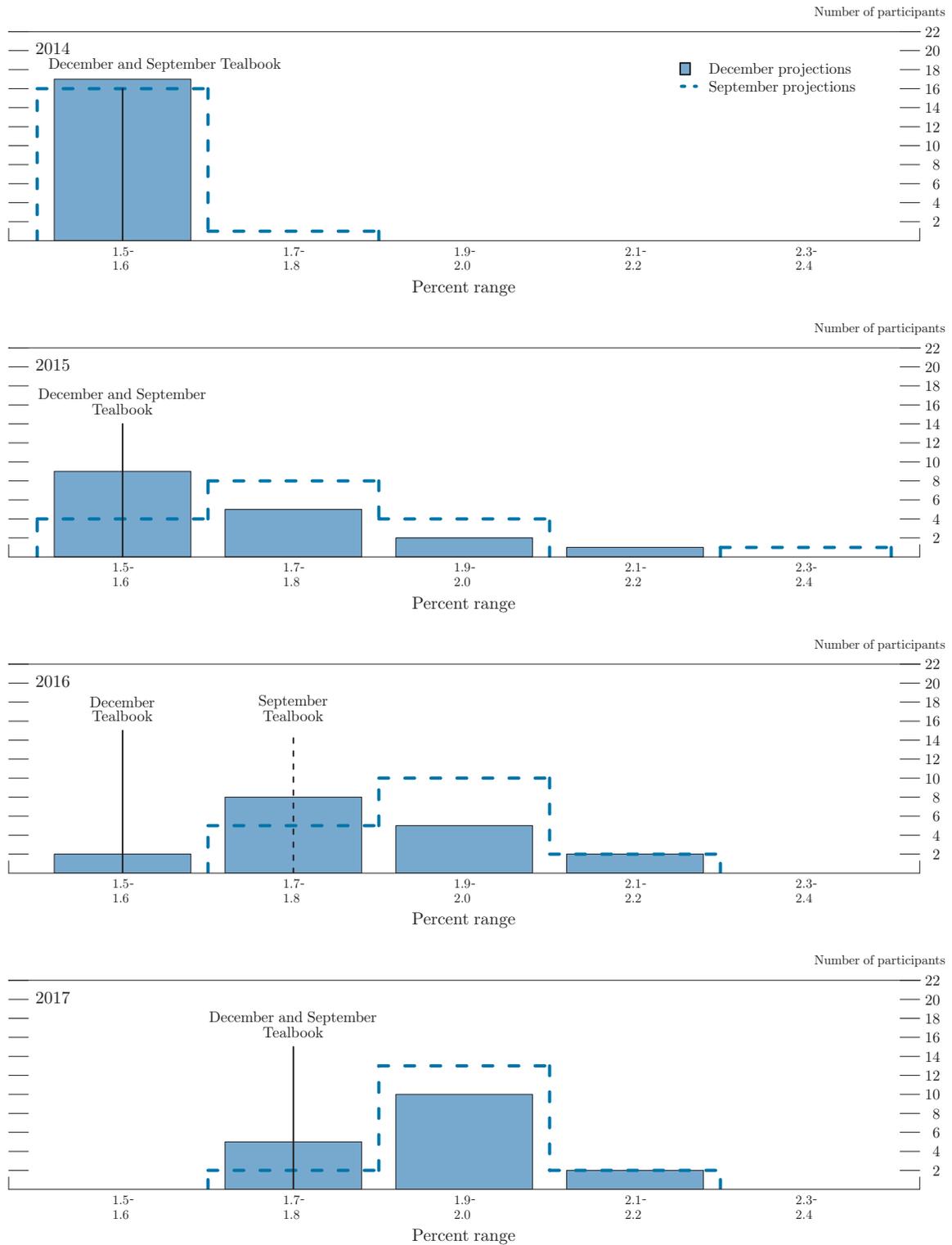
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2014–17 and over the longer run



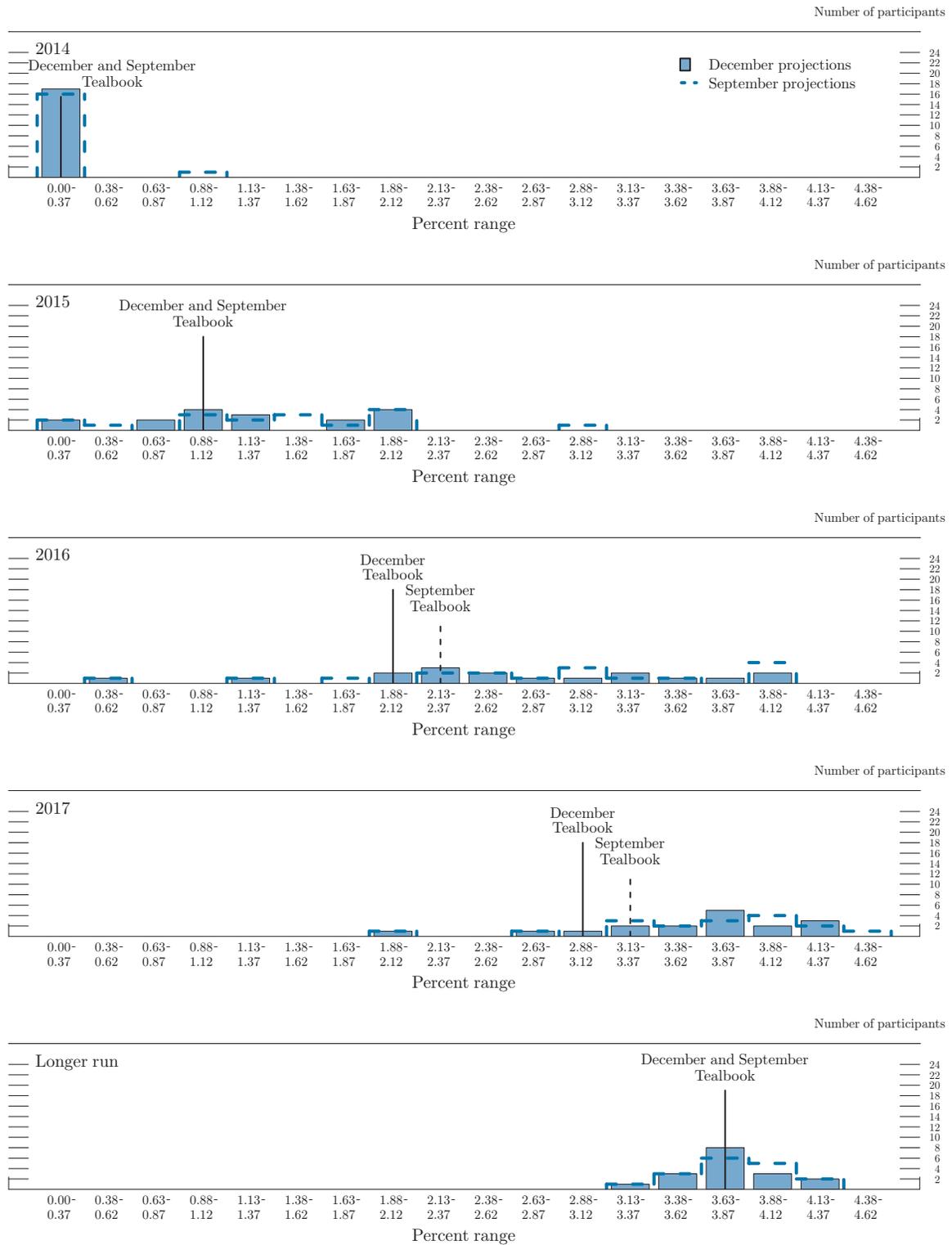
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2014–17



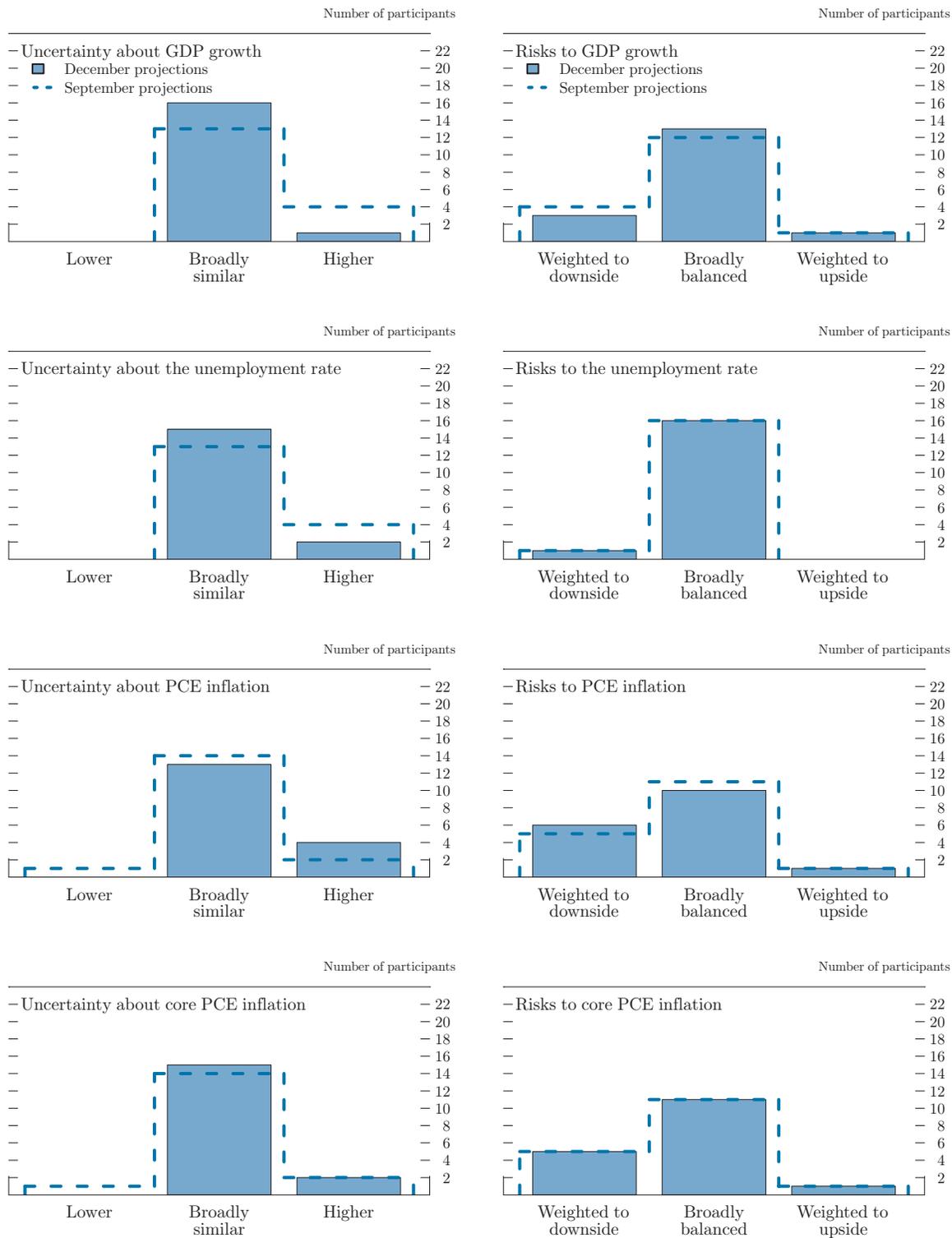
NOTE: Definitions of variables are in the general note to table 1.

Figure 3.E. Distribution of participants' projections for the target federal funds rate, 2014–17 and over the longer run



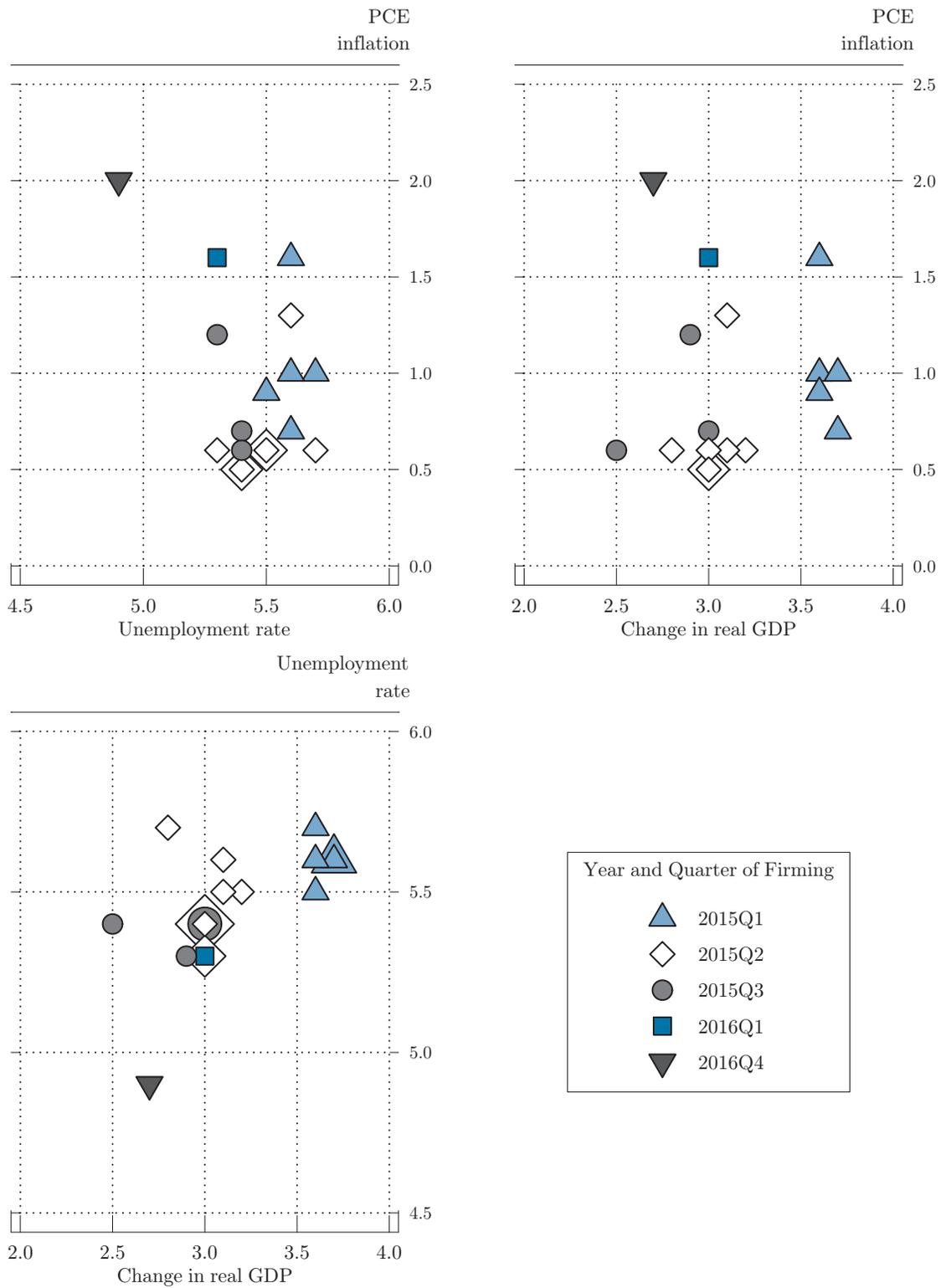
NOTE: The target federal funds rate is measured as the level of the target rate at the end of the calendar year or in the longer run.

Figure 4. Uncertainty and risks in economic projections



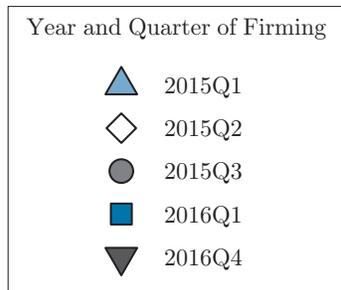
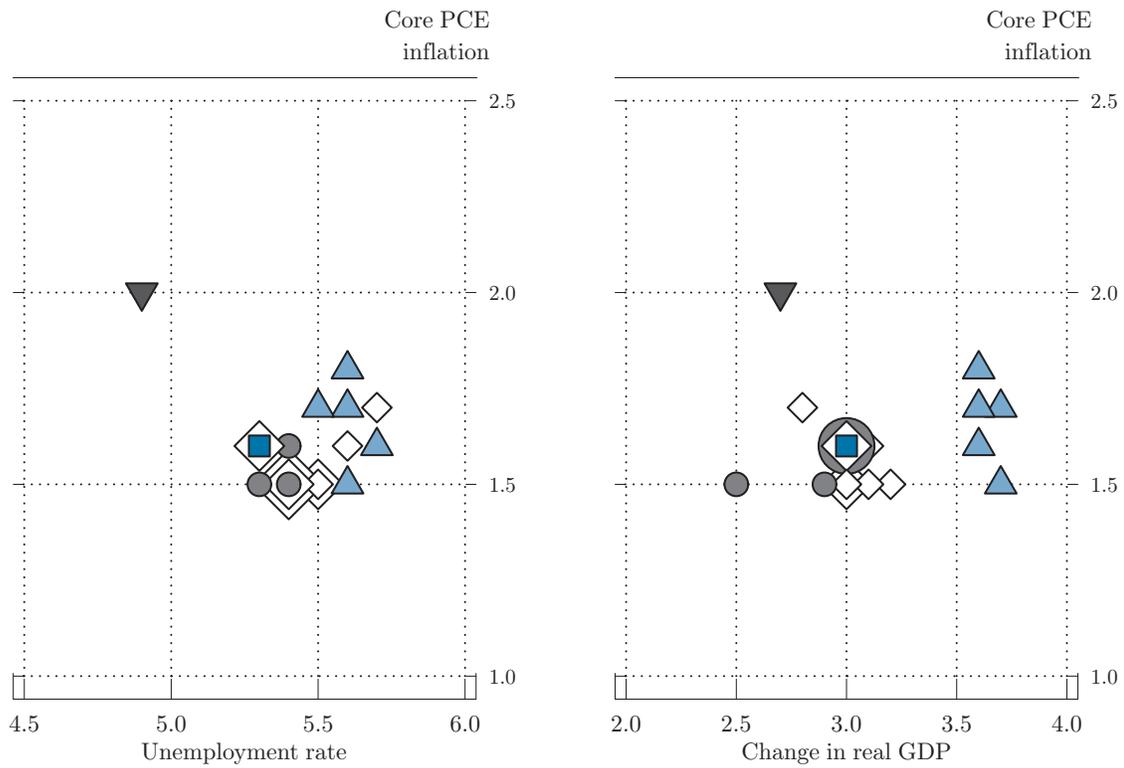
NOTE: Definitions of variables are in the general note to table 1.

Figure 6. Projections of GDP, unemployment, and PCE inflation in the quarter of liftoff



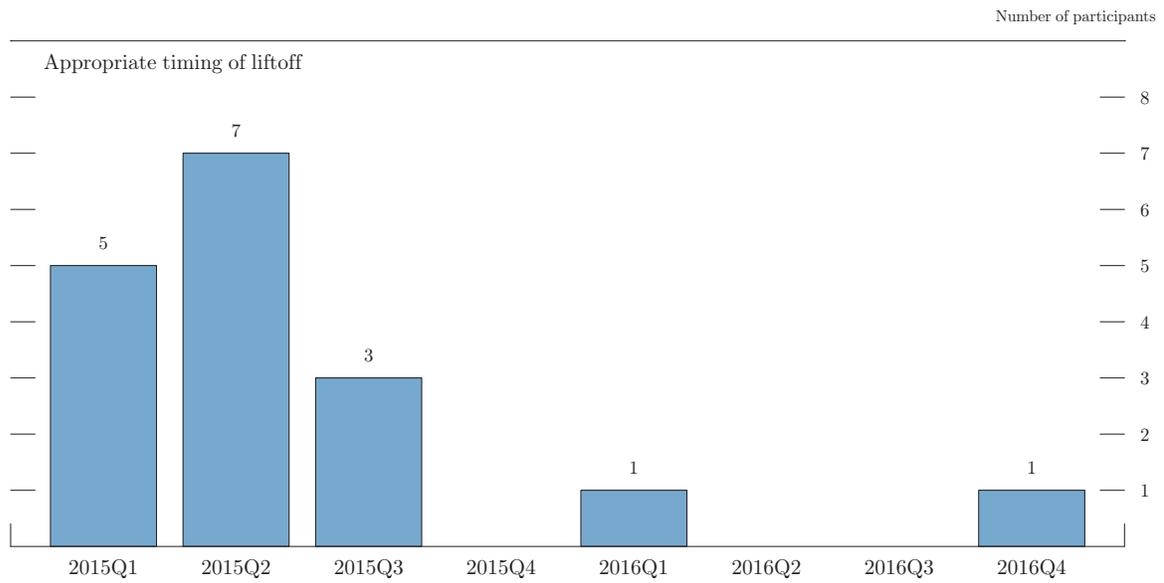
NOTE: When the projections of two or more participants are identical, larger markers, which represent one participant each, are used so that each projection can be seen.

Figure 7. Projections of GDP, unemployment, and core PCE inflation in the quarter of liftoff



NOTE: When the projections of two or more participants are identical, larger markers, which represent one participant each, are used so that each projection can be seen.

Figure 8. FOMC participants' assessments of appropriate liftoff year and quarter



NOTE: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to 1/4 percent will occur in the specified calendar year and quarter.